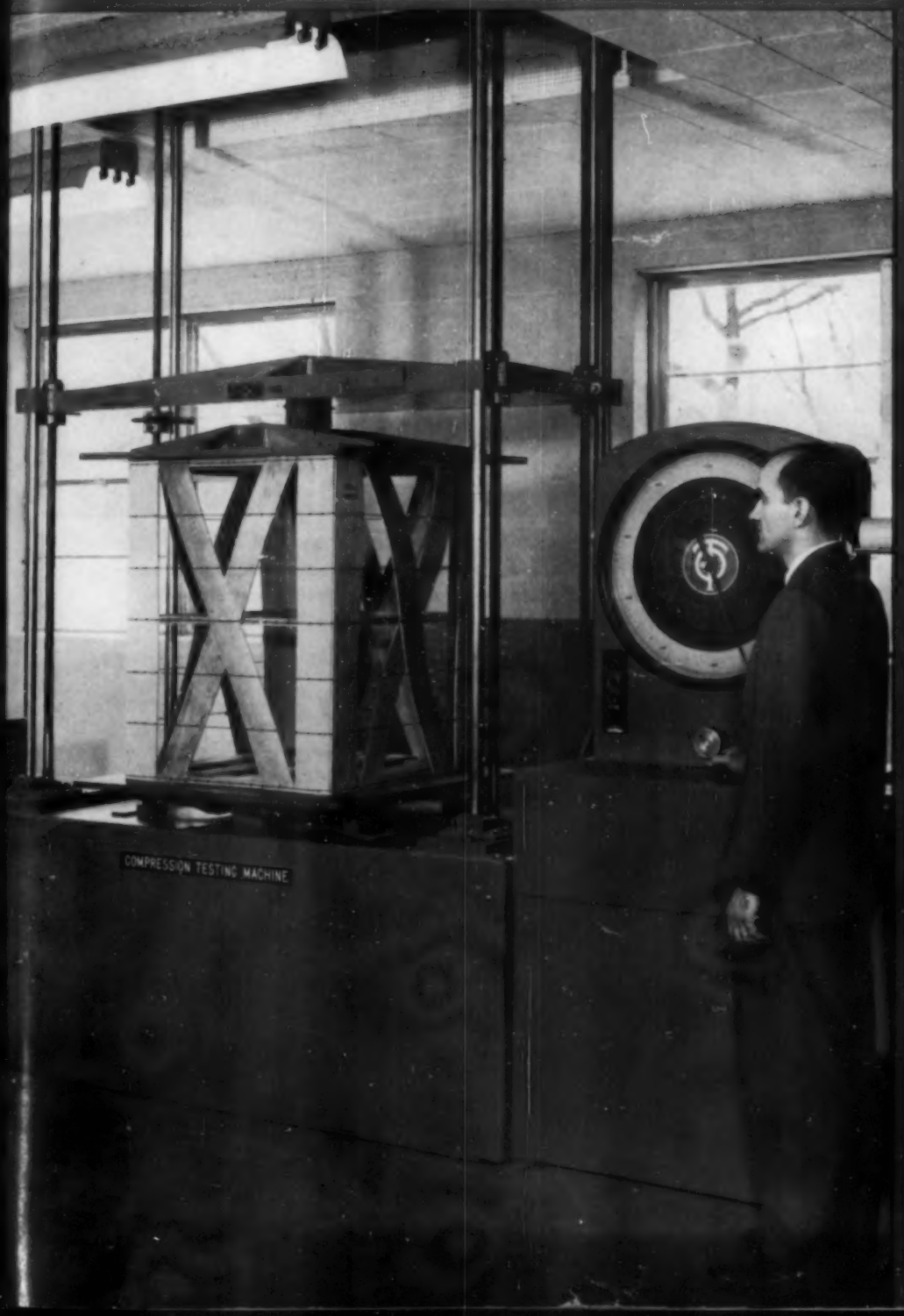
WOOD
and
wood products

April, 1952



C. J. Williams

See Page 23 — WOOD SALUTES

New Testing Lab- oratory helps sell by designing crates to fit product handling condition, and shipping requirements. See page 25.

Hardwood Exhibit

To read about an amazing new public relations project now being completed by the Hardwood industry, turn to page 26.

New Felling Method

High priced logs formerly lost in felling now reach market as lumber due to ingenuous use of cables and cats. Page 30.

See These Features

- Carbides for You
- Gluing Methods
- Saw Maintenance
- Trucking Safety
- Trends
- Names
- Wood Dictionary
- Patent Digest
- Markets
- Foreign Woods

A Vance Publication

The National Management and News Magazine of the Forest Products Industry.

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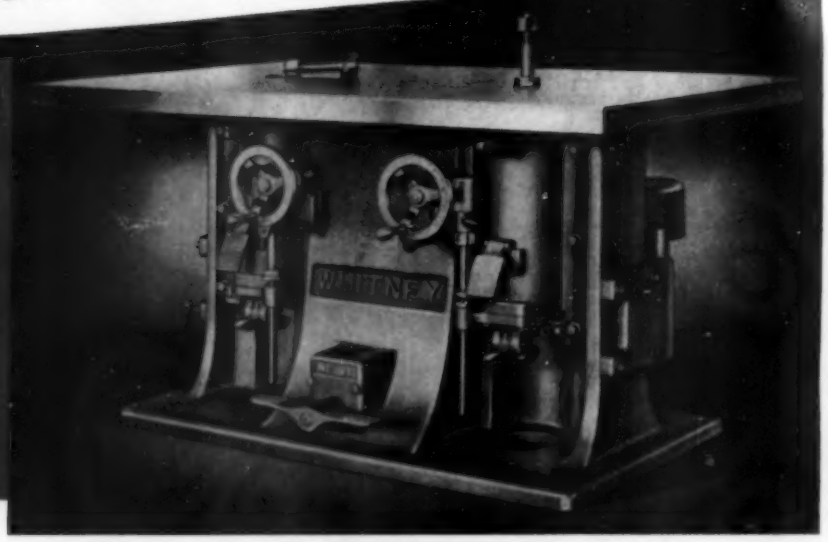
For Quality, Low-cost Production Don't Settle for Less!

WHITNEY
HIGH SPEED
Production Shapers

- Spindle Speeds up to 9000 R.P.M. for Heavy Duty Series
- Up to 15000 R.P.M. for Light Series
- Built-in Spindle Locks
- Spindle Brakes on H.D. Series
- Heavy Duty Ball Bearing Spindles
- Whitney Oil Mist Lubrication
- Heavy Duty Models equipped with Overhead Steady Bearings



WHITNEY Production Shaper No. 91.
With spindles belted direct to motors mounted on base of shaper—requiring no frequency changer.

Half-measures won't solve today's production problems, nor will inferior equipment prove a remedy—today or tomorrow.

Whitney High Speed Production Shapers assure quality production at fast feeds and economy of operation. Their precision construction means accurate work, low maintenance and dependability thru the years.

Users of Whitney Shapers report:

- **Higher output per worker**
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- **Lower production costs**

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PLANERS • SHAPERS • VARIETY SAWS • MORTISERS • BACK KNIFE LATHES

WINCHENDON, MASSACHUSETTS, U. S. A.

WOOD and wood products

Volume 37 No. 4

CONTENTS, APRIL, 1952

BOXES

How Box Laboratory Helps Build Sales..... 25

CARBIDES

Industry Cooperation Will Put Carbides Over..... 38

GLUES

Let's Review the Proper Conditions for Gluing 39

HARDWOODS

Amazing New Industry Exhibit Is Unveiled . . . Burr Green 26

LOGGING

New Coast Felling Method Cuts Breakage 30

LUMBER

Does Kiln Drying Cut down Cupping?..... 48

PLYWOOD

Handy Packages of Small Sizes Now Available..... 42

SAFETY

Here's the Most Common Reasons for Truck Accidents.... 40

SAW MAINTENANCE

More Facts on Keeping Saws in Shape . . . Paul Graham 34

FOREST PRODUCTS RESEARCH SOCIETY NEWS

Annual Meeting News 43

DEPARTMENTS

Markets	16	Trends	8
Names-Events	18	Wood Salutes	23
New Products	69	Woodictionary	8, 55, 63
Patent Digest	64	Wood Puzzlers	66
Foreign Woods	78		

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(advertisement)

Mauk Talk

He paid for his mistake. He thought it was an Easter basket. It was his wife's new hat.

• • •

In the old days a guy was afraid a girl would take it to heart. Now he's afraid she'll take it to court.

• • •

Women can keep a secret just as well as men but usually it takes more of them to do it.

• • •

"Didn't get a wink of sleep last night."

"Hmmmm—anyone I know?"

• • •

MAUK will help you cut down the red ink entries in your books. We leave the waste out of every load of lumber.

Tell us exactly what you want and that's what you'll get—from the MAUK Lumber Company.

• • •

"What does your wife say when you stay out this late?"

"Nothing. I'm not married."

"Then why do you stay out this late?"

• • •

Simple Celia says the only trouble with the straight and narrow is there's no place to park.

• • •

Heard of a model who refuses to pose nude—insists on wearing a string on her finger.

• • •

Telling some brides what they should know on their wedding night is like giving a fish a bath.

• • •

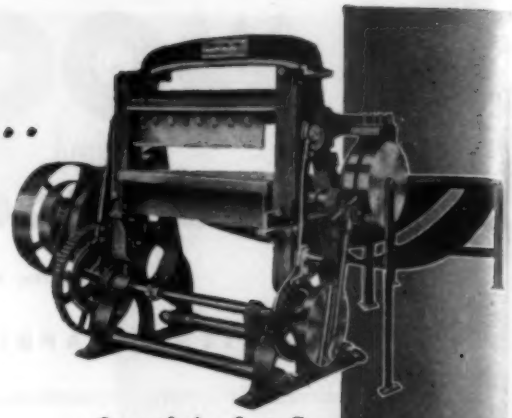
MAUK Seattle Lumber Co.
Seattle 5, Washington

The C. A. Mauk Lumber Co.
Toledo, Ohio

Clipper Progress, too...

HAS MAINTAINED THE PACE

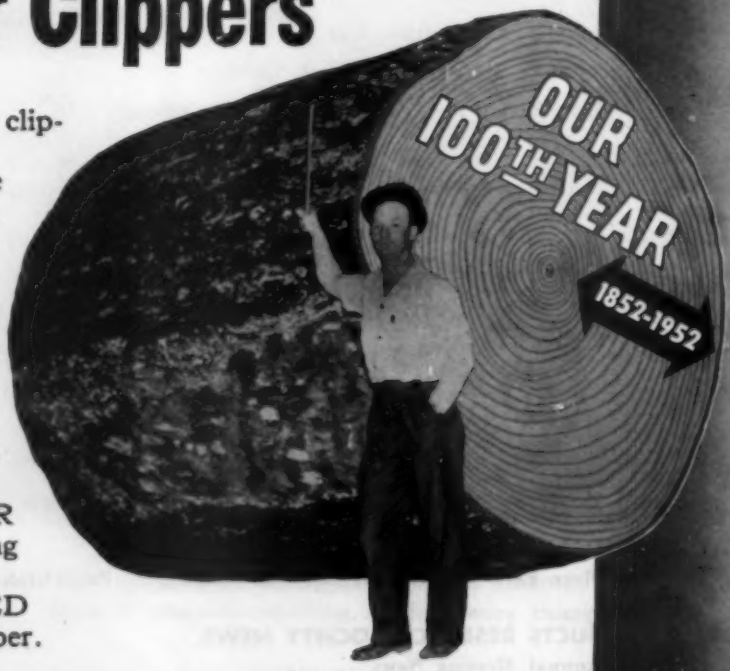
This veneer clipper, developed with the first Coe Lathe, has been followed by a complete line of clippers, whose performance features and originality have long *set and maintained the clipping pace* from the beginning of this important part of the industry.

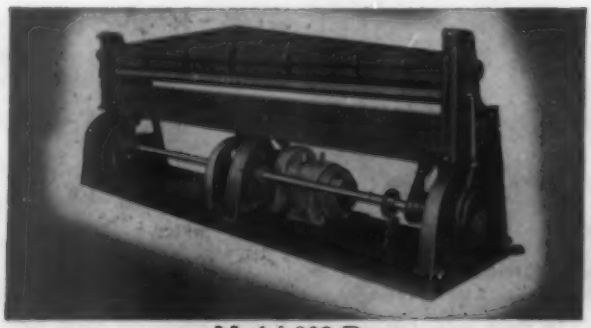


One of the first Coe clippers.

COE Veneer Clippers

Included in the Coe line of veneer clippers are:
The MODEL 330 Multi - knife AUTOMATIC high production PANEL CLIPPER.
The MODEL 328 CLIPPER for general clipping requirements.
The MODEL 328-A CLIPPER—an automatic clipper for package plants.
The STYLE "W" SIZING CLIPPER for resizing veneer.
The MODEL 331 FOOT POWER CLIPPER for sizing and trimming veneer.
The MODEL 346 HIGH SPEED SINGLE KNIFE automatic clipper.





Model 328-D

Model 330-E

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Long the choice of skilled craftsmen, Philippine Mahogany is again available in sufficient quantities to service the cabinet making and furiture industries. As always, the beautiful grain and figure of this fine tropical hardwood will appeal to the most discriminating furniture buyer.

The ability of Philippine Mahogany to take any type finish makes it an IDEAL WOOD for the manufacture of any type or style furniture. Write for colored brochure showing actual finishes, and the formulas used in their preparation.

Philippine Mahogany Association, Inc.

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WOOD and wood products Industry Trends

DEPARTMENT OF DEFENSE

Defense Lumber Purchasing

Since June 1947 the Chief of Engineers for the Department of Army has had the big job of single procurement of lumber for the Army, the Navy and the Air Force. Colonel F. E. Ressegieu, District Engineer, St. Louis District has been designated to control current purchasing and industrial mobilization planning for lumber and allied products for the entire Department of Defense. Actual buying of lumber and allied products is accomplished in three strategically located buying offices; Portland, Ore.; Chicago, Ill.; and Atlanta, Ga.

Piling Procurement

During the period July 1, 1951 to January 1, 1952 2,300,000 lineal feet of piling was procured for use by all segments of the Department of Defense. A large portion of the piling is procured for the Corps of Engineers for docks and shore installations, bridge construction, inland waterways, and overseas construction.

Richmond, Va., Lumber Auction

This auction held February 25th to 27th produced 38,000,000 board feet of softwoods. 157 lumber suppliers and producers registered at the auction. Auctions are held at various intervals in different locations throughout the United States by the Corps of Engineers to advance the scope of coverage and extend participation by more suppliers. This enables all mills, large and small to easily participate in the government lumber procurement program.

Needs White Oak

The Chicago Procurement office, Corps of Engineers, is having difficulty in locating sufficient supplies of white oak of the required quality, dimensions and seasoning to cover current requirements of the Department of Defense. Any hardwood mill having available supplies of white oak lumber please contact the Chicago Procurement office, 226 West Jackson Boulevard, Chicago, Illinois, and have their name placed on the bidders list.

FURNITURE

Prices Softer

Indications are that furniture prices will be softer in the next few months, and then tend to become firmer as inventories get down to normal.

The January furniture markets were better than anticipated, and eminently satisfactory. While buying was cautious and conservative, it was fairly widespread. January bookings nevertheless showed a large decrease from a year ago—but that is because sales in January 1951 were pushed up by an abnormal buying spree, according to Seidman & Seidman, certified public accountants. It may be expected that new orders during the next three or four months will tend to run substantially below a year ago.

Orders booked in January were down 29 percent from the like month of 1951, but 1951 was 43 percent above January 1950. January 1952 orders were, in fact, 2 percent above those of January 1950, and higher in dollar amount than any January in the industry's history with the exception of last year. Compared with December 1951, business booked in January 1952 was up 82 percent. In the previous year, the January increase over December was 127 percent.

Shipments in January were 4 percent greater than in December, and 19 percent lower than in January 1951. Cancellations were not a substantial factor and unfilled orders at the end of the month were up 29 percent compared with December 31 and down 44 percent compared with January 31, 1951.

1951 Retail Profits Show Decline

A recent NRFA announcement reveals that a 35 to 60 percent decline in earnings was indicated by the records of retail furniture dealers for 1951. The narrowing profit margin under OPS operation, and rising production costs were given as two of the principal causes of the decline. It is, however, believed that 1952 will be a good year if retailers recognize the necessity of fighting for business with better selling techniques and more economically planned selling campaigns.

New OPS Reporting Form for New Designs

Manufacturers who plan to offer new furniture patterns during 1952 will be required to list their prices on a new form: OPS Form No. 128. Section 32 of CPR-22 offers an optional pricing method on ceilings for manufacturers selling directly to retail buyers.

Furniture "Processors"

A fast moving new development is taking place in the furniture industry. Known as Furniture "Processors" these

(Continued on page 12)

WOODICTIONARY

POWDER MONKEY
Man in charge of blasting operations.

These Associated Sales Warehouses bring you the products of Oregon's finest Plywood Mills

DALLAS, TEXAS

HOUSTON, TEXAS

SAN FRANCISCO, CALIFORNIA

ST. LOUIS, MISSOURI

CHARLOTTE, NORTH CAROLINA

You can purchase APMI Douglas fir plywood at any one of several centrally located Sales Warehouses.

These regional depots stock plywood that is grademarked and trademarked—your double guarantee of quality.

Equally important, you deal with experienced plywood men. Ask them about exterior-type; interior-type; about plastic surfaced plywood; about *Plyron;* and about *Sea Swirl,* the new three-dimensional decorative plywood for remodeling and new construction.

APMI representatives welcome your inquiries—and they are as close as your telephone.

APMI

BRANCH SALES WAREHOUSES:

4268 Utah St., St. Louis, Mo.
4814 Bengal St., Dallas, Texas
4003 Coyle St., Houston, Texas
1026 Jay St., Charlotte, N. C.
111 Welborn St., Greenville, S. C.
925 Toland St., San Francisco, Calif.
Eugene, Oregon

SALES OFFICES:

31 State Street, Boston, Mass.
1854 Brae-Burn Road, Altadena, Calif.

ASSOCIATED PLYWOOD MILLS, Inc.

General Offices: Eugene, Oregon

Plywood plants at Eugene and Willamina, Oregon
Lumber mill at Roseburg, Oregon

(Continued from page 8)

manufacturers buy finished furniture dimension stock built to their specifications which is then assembled and finished in small assembly plants. These organizations distribute within small sectional areas and warehouse for the retailers. This method of manufacturing overcomes high freight rates and crating etc., on finished furniture. Several furniture manufacturers are considering adopting similar methods with assembly and finishing plants located in the center of their better distribution areas. This is a trend that may have far reaching effects on present day furniture manufacturing.

Housing

1951 Second Best Year

The year 1951 was the second best housing year on record, although credit controls were in effect throughout the period, and the industry came completely under CMP in October. A total of 1,090,000 new dwelling units were started, 22 percent below the record 1,396,000 begun in 1950, as reported by the United States Department of Labor, Bureau of Labor Statistics.

New homebuilding activity in 1951 was marked by a shift in private building from urban to rural nonfarm areas, a steep drop from 1950 in private apartment building, and a sizable increase in the volume of new units begun by public housing authorities.

There were 68,000 home building starts in January 1952, which was a little lower than a year ago. This would suggest that about 900,000 homes for the year will be built—which means another big year. Home prices will be about the same as last year, with materials somewhat lower and labor higher.

The 1962 Home

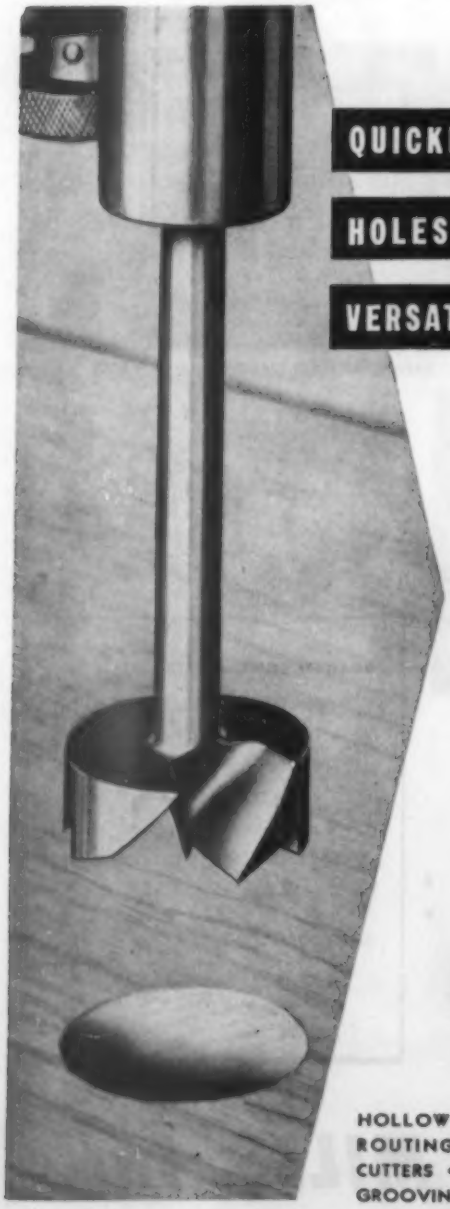
The National Association of Home Builders have just issued some trends in the developments which may materialize in Home Construction in the next ten years. Two of these predictions vitally affect the Forest Products Industry. 1. Home furnishings may become an integral part of the house with very few loose, movable units. 2. Pre-fabricated modular panels for floors, walls and roofs, and the use of economical steel sections will make house building less intricate. At the recent convention of the above organization in Chicago it developed that already the trend outlined in Point one is progressing fast. Today many builders are building storage cabinets, dressing tables etc., into the walls. This vitally affects furniture manufacturers. On Point Two now is the time for our industry to publicize the advances that have been made in laminates, paneling, fireproofing and the story of Wood vs Steel in home construction before we lose another market—our largest.

Construction

Near-Record Levels Continue

Construction activity continued at near-record levels in January after allowance for seasonal factors, according to a report issued jointly by the Building Materials Division, U. S. Department of Commerce and the U. S. Labor Department's Bureau of Labor Statistics. The total value of new construction put in place during January amounted to more than $2.1

(Continued on page 14)



QUICKLY BORE SMOOTH HOLES UP TO 3" WITH THIS VERSATILE MULTI-SPUR BIT

A fast, smooth-boring bit for those special jobs beyond the scope of the usual machine bit. Bores any arc of a circle on an edge of a piece of stock. Operates well in either soft or hard woods and is often preferred for end-grain work. Smoothly bores veneered stock without tearing and will bore at an angle, overlapping, or at close centers without splitting stock. Stocked in sizes ½ to 3". Write for facts. Greenlee Tool Co., 2154 Herbert Avenue, Rockford, Illinois.

TOOLS FOR CRAFTSMEN
GREENLEE

HOLLOW CHISELS • MACHINE BITS • DRILLS
ROUTING BITS • MULTI-SPUR BITS • PLUG
CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTIO'

PRODUCTION PROBLEMS?

Let Gamble Brothers, producers of well-designed dimension hardwoods, help you redesign to solve your cost and production problems without sacrifice of style or quality.

Gamble Brothers supplies only the *best* solid parts, core stock, curved or flat laminates in lumber or veneer, and plastic-faced materials.

More than fifty years' experience in wood engineering enables Gamble Brothers to supply your wood parts needs—rough-cut, semi-machined or finished—faster and more economically than you can make them yourself

WRITE TODAY!

Engineered Wood Parts in Southern and Appalachian Hardwoods, Walnut or Mahogany

GAMBLE BROTHERS
GB
GUARANTEED BOND

INCORPORATED

OFFICES AND MAIN PLANT: LOUISVILLE 9, KENTUCKY

BRANCH: MONTGOMERY, ALA.

TRENDS

(Continued from page 12)

billion, a 4 percent decline from December and a slight rise above the January 1951 total.

Substantial increases over the year in military, industrial, and public utility construction maintained the level of construction outlays despite reductions in housing, commercial building, highway and some other types of construction. School building activity also was above a year ago in January.

Total construction awards in 1951 for the 37 states east of the Rockies amounted to $15,751,131,000 or 8 per cent more than 1950's total of $14,501,055,000, according to the F. W. Dodge Corporation, construction news and marketing specialists.

Non-residential awards for 1951 reached $6,822,513,000 or 31 per cent more than the 1950 total. Residential contracts amounting to $6,205,388,000 were 8 percent below the 1950 comparative figure.

Public and private works and utilities had a final total of $2,723,250,000 or 6 per cent higher than the total for the previous year.

Send BRUCE your inquiries on

MACHINED WOOD PARTS

Bruce specializes in quantity production of solid or glued-up Southern Hardwoods, semi- or completely-machined.

Bruce is equipped to serve you!

- All types woodworking machines
- 5 large sawmills
- Strategic locations for timber
- 25-year experience
- Dependable quality and service

Send your inquiries to

BRUCE **E.L. BRUCE CO.**

1616 Thomas St., Memphis 1, Tenn.

RESEARCH

Develop Better Pine Seedlings

The Tennessee Valley Authority is planning an extensive program to improve the southern pines, the principal species used in the vast reforestation program now under way in the South.

TVA's two forest tree nurseries produce about 20 million pine seedlings a year. As a first step toward developing better seedlings, it is planned to search the nursery seed beds each year for super-seedlings—those that stand head and shoulders above the mass. In each of the next five years foresters will select loblolly, shortleaf, and white pine super-seedlings at the rate of one for every 200,000 seedings produced. These will be planted in special test plots along with a certain number of "average" seedlings which will serve as checks. All super-seedlings will be evaluated at five years and again at ten years. Any that do not show superiority will be removed from the test plots, as will also those check trees that fall below the average in growth.

Similar measurements and ratings will be carried out at 15 years and again at 20 years. By that time possibly one-fifth of the super-seedings will remain—the very best ones from the standpoint of growth. Each will then represent one in a million in terms of total seedling production over a five-year period. These will be available for seed production, grafting, and breeding experiment.

Better Forestry Results

Seven south Arkansas Counties have given the nation a 2½ million acre demonstration of how well-managed forests can help cure the so-called country's timber deficit. Since 1936, pine saw timber volume has increased by one-third in the area made up of Ashley, Bradley, Calhoun, Cleveland, Dallas, Drew and Grant Counties according to the findings of the second Forest Survey of Arkansas conducted by U. S. Forest Services, Southern Forest Experiment Station at New Orleans. Pine saw timber in these seven counties now adds up to almost 6.2 billion board feet. This is 33 percent more than the 4.6 billion board feet present in 1936 when the first survey of the area was made. In terms of total pine growing stock

(Continued on page 53)

Kimpak® Float Packaging

COFFEE TABLE
Surface Protection

Cuts shipping costs— reduces damage in transit!

How many millions of dollars manufacturing concerns lose each year because of product damage in shipment could never be accurately estimated. But today, every company is able to count its *savings* after a change from outmoded, inferior packaging materials. In many cases, the change has been to KIMPAK® Float Packaging—now recognized as one of the world's most effective packaging methods at lowest true cost.

The effectiveness of KIMPAK protective cushioning is well demonstrated by the Mansion House Furniture Company—manufacturers who can point to an impressive record of damage-free shipments since their adoption of a modern, up-to-date packaging operation. With KIMPAK, Mansion House furniture is protected against scratching, rubbing and press-marking. Yet KIMPAK is feather-light—soft, clean and easy to apply as wrapping paper. And it not only provides the necessary cushion to "float" your furniture to market damage-free, but serves as a decoration to make *and keep* your package as attractive as the product itself.

Take a tip from the many companies who have packed and shipped every kind of furniture under the most difficult conditions—with complete safety. Investigate KIMPAK Float Packaging at your earliest opportunity. For information, write to Kimberly-Clark Corp., Neenah, Wis.

Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

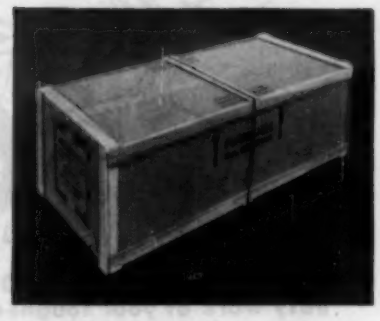
A Kimberly-Clark Cellulose Wadding Product

PROTECTIVE CUSHIONING

*T. M. REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

Cut-away view of shipping container to show design of interior bracing with corrugate inserts.

A thick blanket of KIMPAK cushions the delicate finish from damaging contact with bracing members and inside walls of container.



The finished package of heavy-duty corrugated board will deliver its contents factory-fresh to the owner's home.

Coffee table designed by Lorin Jackson and produced by Mansion House Furniture Co. container manufactured by Quaker Container Co.; all of Los Angeles, California.

— TWO FREE BOOKLETS! —

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin WW-452

Please send me free, the following illustrated KIMPAK booklets:

- ☐ Float Packaging
- ☐ Data file on Furniture Packaging under Consolidated Freight Classification

Name .....

Address .....

City, Zone, State .....

MARKETS

These prices are estimates made available by Mr. George Land, publisher of the *Hardwood Market Report*, and reflect prices as indicated in his copyrighted issue of March 8, 1952. Mr. Land's complete report is available weekly; those who want the entire list should contact him c/o Box 5716 Memphis 4, Tenn.

SOUTHERN HARDWOODS

F.O.B. mills—Texas & Louisiana area—estimate of present FOB Texas & Louisiana mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on hand-sawn Southern Hardwoods in carload quantities, random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'. on straight cars of upper bracket grades premiums are frequently being paid.

ASH—FIRM TEXTURE

	FAS	No. 1C	No. 2C
4/4-in.	155	110	62
6/4-in.	168	120	65
8/4-in.	180	140	70

BASSWOOD

4/4-in.	165	130	80
6/4-in.	170	135	87
8/4-in.	180	145	90

BEECH

4/4-in	125	100	55
6/4-in.	145	110	60
8/4-in.	167	127	72

CHERRY
Same as Appalachian

RED GUM—PLAIN

	FAS	No. 1C	No. 2C
4/4-in.	200	150	70
6/4-in.	220	170	75

RED GUM—QUARTERED

4/4-in.	225	175	75
6/4-in.	250	200	90
8/4-in.	260	210	95

SAP GUM—PLAIN

4/4-in.	110	90	45
6/4-in.	130	110	
8/4-in.	160	140	

HACKBERRY

4/4-in.	112	92	67
6/4-in.	132	110	77
8/4-in.	137	112	77

HICKORY
Temporarily suspended

MAGNOLIA

4/4-in.	170	135	70
6/4-in.	185	143	84
8/4-in	205	147	86

SOFT MAPLE—WHAD

4/4-in.	130	110	67
6/4-in.	145	120	77
8/4-in.	155	125	80

SOFT MAPLE—WHND

4/4-in.	115	90	60
6/4-in.	130	105	75
8/4-in	135	110	80

RED OAK—PLAIN

4/4-in.	180	105	58
6/4-in.	190	135	
8/4-in.	200	140	

WHITE OAK—PLAIN

4/4-in.	185	115	58
6/4-in.	195	140	
8/4-in.	205	145	

PECAN

4/4-in.	115	95	50
6/4-in.	130	110	65
8/4-in.	155	130	70

POPLAR—PLAIN

	FAS	S&S	No. 1C
4/4-in.	165	155	125
6/4-in.	185	175	140
8/4-in.	205	195	150

SYCAMORE—PLAIN

	No. 1C	No. 2C
4/4-in.	117	97	60
6/4-in.	135	105	60

TUPELO—PLAIN
TUF TEXTURE—DEEP SWAMP

4/4-in.	110	90	45
6/4-in.	130	110	
8/4-in.	160	140	

WILLOW

4/4-in.	142	120	60
6/4-in.	142	122	67
8/4-in.	150	125	70

APPALACHIAN HARDWOODS

F.O.B. mills—Johnson City, Tennessee area—estimate of present FOB Appalachian mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade of band-sawn Appalachian hardwood in carload quantity, random widths & lengths, rough, air dried & graded in accordance with

READY-TO-USE, EASY-TO-USE Certus liquid adhesive makes easy work of your toughest gluing problems. Always ready to go to work . . . always easy to apply, Certus' longer pot life keeps it fresh and usable to the last drop.

Applied by hand, mechanical spreader or glue guns, Certus sets rapidly under pressure . . . makes a strong, durable joint with a glue line that's invisible.

Glue users everywhere have found Certus one of the most versatile of industrial adhesives. It's ideal for assembly, pattern making and scores of other wood gluing jobs. It's especially suited for bonding of plastic materials to wood.

Like all Monite industrial adhesives, Certus is the thoroughly dependable product of 35 years of research and development.

Write for a free test sample of Certus. Ask for your copy of the booklet "The First Pair of Skis" by H. L. Prestholdt, President.

TRADE MARK MONITE FOUNDED 1918

MONITE GLUE COMPANY

1004 Monite Building, Minneapolis 11, Minnesota

NHLA rules of inspection. Prices in dollars per M'. on straight cars of upper bracket grades, premiums are frequently being paid. Basis selected for the purpose of indicating transportation costs to principal consuming markets from Johnson City, Tennessee area.

TOUGH ASH	FAS	FIF	No. 1C	No. 2C
4/4-in.	160	150	110	67
6/4-in.	180	170	122	72
8/4-in.	190	180	147	85

BASSWOOD				No. 2A
4/4-in.	180	170	130	84
6/4-in.	190	180	137	94
8/4-in.	195	185	147	96

BEECH				No. 2C
4/4-in.	145	135	110	75
6/4-in.	160	150	120	75
8/4-in.	170	160	130	80

BIRCH				
4/4-in.	205	195	140	80
6/4-in.	220	210	150	85
8/4-in.	230	220	155	90

BUCKEYE				
4/4-in.	135	125	100	65
6/4-in.	160	150	115	73
8/4-in.	165	155	120	78

CHERRY				
4/4-in.	200	190	135	80
6/4-in.	235	225	160	85
8/4-in.	250	240	170	90

CHESTNUT	FAS	No. 1C	FAS WHND	No. 1C WHND
4/4-in.	165	115	135	100
6/4-in.	170	120	140	105
8/4-in.	175	125	150	110

HICKORY	FAS	FIF	No. 1C	No. 2C
4/4-in.	125	115	78	53
6/4-in.	145	125	86	58
8/4-in.	165	155	90	60

HARD MAPLE				
4/4-in.	190	180	125	80
6/4-in.	200	190	135	84
8/4-in.	205	195	145	90

SOFT MAPLE				
4/4-in.	160	150	115	67
6/4-in.	170	160	125	69
8/4-in.	175	165	130	72

RED OAK—PLAIN				
4/4-in.	185	175	120	
6/4-in.	200	190	135	
8/4-in.	215	205	145	

WHITE OAK—PLAIN				
4/4-in.	200	190	125	
6/4-in.	220	210	145	
8/4-in.	225	215	155	

WHITE OAK—WHND				
4/4-in.	115	105	85	..
6/4-in.	140	130	110	..
8/4-in.	150	140	115	..

YELLOW POPLAR—PLAIN				No. 2A
4/4-in.	210	200	140	85
6/4-in.	220	210	150	93
8/4-in.	230	220	160	..

POPLAR SQUARES	FAS	No. 1C & SD
4x4-in.	245	175
6x6-in.	280	190
8x8-in.	340	240

WALNUT—STEAM TREATED	FAS 6' & up	FIF 6' & up	No. 1C	No. 2C
4/4-in.	350	305	185	80
6/4-in.	370	325	210	95
8/4-in.	385	340	235	100

Walnut list reflects average fob mill, all areas. Basing point not generally observed.

NORTHERN HARDWOODS

Estimate of present FOB Wausau, Wisconsin mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Northern hardwoods in carload quantities random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'.* On straight cars of upper bracket grades, premiums are frequently being paid.

BROWN ASH	FAS	No. 1C	No. 2C
4/4-in.	145	105	73
6/4-in.	155	120	83
8/4-in.	160	130	88

BASSWOOD			
4/4-in.	180	125	78
6/4-in.	190	135	88
8/4-in.	195	145	96

BEECH			
4/4-in.	145	100	68
6/4-in.	160	115	78
8/4-in.	165	120	80

BIRCH			
4/4-in.	265	145	80
6/4-in.	275	160	90
8/4-in.	280	175	100

ROCK ELM			
4/4-in.	135	115	65
6/4-in.	145	125	75
8/4-in.	150	135	80

SOFT ELM			
4/4-in.	135	105	71
6/4-in.	135	115	81
8/4-in.	140	120	86

HARD MAPLE			
4/4-in.	190	130	78
6/4-in.	200	140	81
8/4-in.	205	145	82

SOFT MAPLE			
4/4-in.	155	120	72
6/4-in.	170	130	82
8/4-in.	185	140	90

RED OAK			
4/4-in.	175	125	77
6/4-in.	185	145	82
8/4-in.	195	155	85

*Air dried Northern Hardwoods are no longer available and sales presently being made cover green stock or stock only partially seasoned. Orders are being placed for stock to be cut and shipped green when accumulated.

You may be able to lower production costs—*and increase profits*—by letting North Pacific furnish lumber fitted to your needs. Waste can be cut to a minimum and the quality of the finished product can often be improved.

If you will give us complete information as to where and how you use lumber, our staff of experienced wood engineers will study and analyze that information and perhaps ask more questions. Then at no cost or obligation to you we will strive to show you how North Pacific can help you save time, money and worries.

For on-the-job consultation and service, one of our factory trained representatives will come direct to your plant.

SEND TODAY complete specifications for all jobs where you use (or plan to use) lumber. Please tell the end uses, too!

SAVE TIME MONEY WORRIES

We can furnish you: Douglas Fir • Hemlock • Spruce Noble Fir • Western Red Cedar • White Fir • Larch Ponderosa Pine • Sugar Pine • Idaho White Pine.

ONLY THE BEST NORTHWEST TIMBER

NORTH PACIFIC LUMBER CO.

P. O. BOX 7764 • PORTLAND 12, OREGON
Teletype PD570 • Telephone: MUrdock 2126

Names... Events

Personnel Changes

M. W. SMITH, JR. has been named division director of the Forest Products Division, Office of Price Stabilization, Washington, D. C. M. C. WALSH has been appointed assistant division director; ANDREW M. MC BURNEY has been named chief of the Pulp, Paper and Paperboard Branch; C. E. CARPENTER has been named assistant chief of the Pulp, Paper and Paperboard Branch.

Five promotions were announced by the OLYMPIC STAINED PRODUCTS Co. of Seattle, as follows: BURR ODELL becomes General Sales Manager in charge of all sales of all products of the company; HENRY SMITH becomes Mid-Western Sales Manager with headquarters in Denver; VICENT Moss will represent the company in the Southeast with headquarters in Houston; GEORGE BOURNE will have charge of the Atlantic Seaboard sales with headquarters in New York; FORREST WILSON of San Francisco will handle California sales.

CLINTON F. ROBINSON was elected President and Director of The Carborundum Co., Niagara Falls, N. Y., to succeed H. K. CLARK who resigned as President.

Mr. Robinson, a native of Ohio, has a distinguished record in both the military and industrial field. Graduating from West Point in 1924, later acquiring an engineering degree at Cornell, he was successively promoted from 1st Lt., Corps of Engineers to Major General in 1948. He was former

Clinton F. Robinson

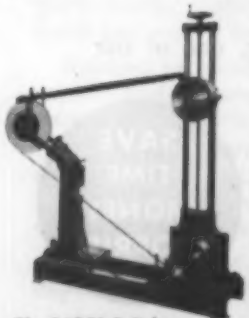
President of the Frederic B. Harris Co. of New York City; presently Director and Member of the Executive Committee of Fansteel Metallurgical Corp., Chicago; Director and Member of the Executive Committee of R. P. Bennett Co., Frederick, Md.; and Director of American Metallic Corp., Portland, Oreg.

RUSSELL A. SMITH was appointed field sales manager of the transportation seating div. of The American Seating Co., Grand Rapids, Mich.

Six promotions are announced by MINNESOTA MINING & MFG. CO., St. Paul, Minn., as follows: LOUIS F. WEYAND of Detroit was promoted to executive vice president; ROBERT W. YOUNG, president of Minnesota Mining & Mfg. Internat'l Co., handling foreign trade, was named to the chairmanship of that organization's board; CLARENCE B. SAMPAIR was named president of 3M International, also re-

(Continued on page 20)

BELT SANDING *hits a new high!*



The BADER Polisher is manufactured and sold by STEPHEN BADER CO., Rockville Centre, N. Y.

BEHR-MANNING coated abrasive belts and the new BADER Polisher are combining to set new production and economy records. The versatile BADER machine makes possible the use of a wide range of diameters in contact wheels — from 1" to 16". The use of pre-shaped wheels makes contour sanding faster and easier. Smooth-cutting, flexible, long-lasting BEHR-MANNING coated abrasive belts enable you to make the most of this new production method.

See this and other new sanding methods demonstrated in your own shop or in a nearby BEHR-MANNING Methods Room.

Write today to Dept. WP-4

BEHR-MANNING CORPORATION
division of NORTON Company
▲ COATED ABRASIVES
▲ SHARPENING STONES
▲ PRESSURE-SENSITIVE TAPES
Main Office and Plant: Troy, N. Y.
For Export: Behr-Manning Overseas, Inc.

Step on it for more production

PORTER 43-20J Automatic Hydracut Saw

Foot Pedal Control Ends Operator Fatigue

The Porter 43-20J Automatic Hydracut Saw saves hours of labor . . . enables any cutting room operator, regardless of age, to cut more lumber per day by eliminating tiring hand operation. Operator simply positions the lumber against the adjustable cut-off stops . . . and presses the electrically operated foot control. The saw blade, mounted on a hydraulically operated carriage, *automatically* moves forward to make the cut and *automatically* returns. Fatigue from manual "push-pull" operation is gone.

Stroke length is quickly adjusted by a convenient lever. Cutting speeds range from 0 to 45 cuts per minute.

The new Porter Bulletin 43-20J-1 fully explains the Automatic Hydracut Saw. Send for your copy today.

Dividend Designed by **PORTER**

C. O. PORTER MACHINERY CO.
660 Front St., N. W. Grand Rapids Michigan, Michigan

NAMES . . . EVENTS

(Continued from page 18)

taining his post as vice president of the parent company; JOHN A. BORDEN was named sales and marketing consultant for all 3M tapes; GEORGE W. SWENSON and HUBERT J. TIERNEY were elected vice presidents of the parent company.

WILLIAM E. KNAPPMAN was appointed technical director of the United Lacquer Mfg. Corp., Linden, N. J.

EDWIN R. BUTLER has joined the staff of Timber Engineering Co., Washington, D. C., as manager of its publicity dept.

ANDREW B. STEVENS has been promoted to position of Assistant Factory Manager of American Wheelabrator & Equipment Corp., Mishawaka, Ind.

GEORGE A. FYRBERG has been appointed production manager of Norton Company's Abrasive Div., Worcester, Mass.; LOUIS J. BAUER was appointed abrasive engineer with headquarters in E. C. Blackstone Co., Memphis, Tenn.

MR. C. L. MOREY heads as Manager the headquarters for the Timber Div. of Fibreboard Products, Inc. now located at 1789 Montgomery St. San Francisco, Cal.

CHARLES W. NIEDERAUER was appointed manager of Durite Products of the Borden Co.'s Chemical Div., New York City.

B. F. CHEATHAM was elected President of Moore-Reid & Co., and will also serve as General Manager of the Mississippi Valley operations of Georgia-Pacific Plywood Co.

IRVIN H. LUITEN has been appointed Oregon field representative of Weyerhaeuser Timber Company's dept. of public information, Tacoma, Wash.

Mergers

JARECKI MACHINE & TOOL CO., Grand Rapids, bought the controlling interest in NICHOLS & COX LUMBER CO., also of Grand Rapids, Mich.

ROCKWELL MFG. CO., Pittsburgh, Pa., has announced the acquisition of the DELUXE SAW & TOOL CO., Chicago, and the KARBIDE KING TOOL CORP. of High Point, N. C.

PAISLEY PRODUCTS of Chicago has purchased the LAYTON ELASTIC GLUE CO., also of Chicago.

New Firms

H. E. BOVAY, JR., announced they have formed a partnership due to growth of their organization. BENNETT W. BURNS, CHARLES A. LAWLER, J. WAYNE HOLLAND and RICHARD B. ROBERTSON have been taken into partnership by Mr. Bovay.

Articles of incorporation have been filed by R. W. BUTLER & SONS LBR. CO., INC., West Monroe, La.

FURNITURE ORIGINALS, INC., New York City is a new firm just beginning operations.

FORBING SAWMILL CO., INC., Shreveport, La., is a new firm recently organized.

Articles of incorporation were filed by DAVIDSON SASH & DOOR COMPANY of Lake Charles, La.

A recently organized woodworking firm is MARGARETVILLE WOOD PRODUCTS CO., INC., New York, N. Y.

Articles of incorporation were filed by the GARVEY LUMBER MILLS, INC., Willsboro, N. Y.

PEARL RIVER HAMPERS, INC., announces the location of their new hamper plant in Popularville, Miss. This will be operated by M. A. WINBORN and C. F. LONGINO.

(Continued on page 58)

Break that Strangle-Hold on your Wood Gluing Production!

Investigate...

Thermatron

HIGH FREQUENCY GENERATORS AND EQUIPMENT

Seen in the jig is an entire cabinet assembly to be glue-set electronically by THERMATRON in only 30 seconds. The bond is stronger than the wood itself by actual test! Hidden in the background is the 3 KW generator which masterminds this job.

THE MODERN MIRACLE of dielectric wood bonding is fast making the "glue and clamp" method obsolete. **THERMATRON** is a pioneer in dielectric heating equipment . . . can show you how to shave production time to seconds, save on labor, reduce floor space and expensive rejects . . . yet produce lasting bonds stronger than the wood itself.

THERMATRON supplies the complete installation, both generators and necessary jigs, under one contract and one responsibility. Often the immediate savings in production effected by **THERMATRON** equipment more than offset the initial installation cost.

Write us today for complete details without obligation . . . and ask for our instructive bulletin No W-4.

HIGH FREQUENCY GENERATORS AND EQUIPMENT FOR ELECTRONIC GLUE DRYING • BENDING • EDGE GLUING • VENEER BONDING

Standard stock generators available from 200 Watt to 20 KW output, operating on 110 or 220 volt lines. Larger size generators up to 100 KW can be supplied for larger requirements.

*T. M. Reg. U. S. Pat. Off.

"Thermatron" product

RADIO RECEPTOR COMPANY, INC.

Sales Dept.: 251 W. 19th St., New York 11, N. Y. • Factory: 84 N. 9th St., Brooklyn 11, N. Y.

"Accurate, speedy finishing . . ."

"Veteran glue man . . . . . ."

"Scientific lumber Seasoning . ."

Wood Salutes

With this issue, we are saluting three more top rank executives, each of whom is contributing his expert knowledge and experience in an important department of the forest products industries.

Wilmot T. Pritchard

Wilmot T. Pritchard, Seattle, Wash., is president and general manager of the Stetson-Ross Machine Co., builders of planers.

Bill Pritchard has spent all of his business career in this woodworking machinery industry. In 1910 he went to the Pacific Coast as a salesman for a planing machine manufacturer. In 1910 he went with the Stetson-Ross Machine works in the sales department. In 1921 he and associates acquired the Stetson-Ross business and he became president.

Building a highly efficient organization and working with his skilled engineers and designers, he was in the front rank of those who have brought the highest degree of quality and accuracy to wood manufacturing.

Stetson-Ross was first to develop cutting circles larger than 7 inches, and to incorporate more than 8 knives, having introduced 10, 12, 14, 16 and even 20 knives in cutting circles ranging from 9 to 11 inches.

Mr. Pritchard spent much of his time in Washington, D. C. during World War II, as his company was on full time war work during 1942-

(Continued on page 80)

J. B. B. Stryker

Born in Lincoln, Illinois seventy-two years ago, J. B. B. Stryker, Sr. was only nineteen years old when he joined with Frank G. Perkins in the formation of the organization known as Perkins Glue Company. Today, as President of Perkins Glue, J. B. B. Stryker is virtually dean of the industry in which he has spent his entire adult life.

Plywood and furniture fabricators, using the many varieties of glues available today, may find it hard to believe that when Stryker entered the business there was only one type of wood glue—animal—and that had been in use since the earliest days of history! Working with Frank Perkins in their little Florida plant, Stryker was largely responsible for the evolvement of Vegetable Glue—the world's first successful new wood glue in centuries!

Still in active touch with the wood industries, J. B. B. Stryker has had a prominent part in the many changes that have expanded wood product manufacturing far beyond the wildest expectations of his boyhood days. He must feel great satisfaction in knowing that his Vegetable Glue was the fore-

(Continued on page 79)

Charles J. Williams

Charles J. Williams has devoted practically his entire business life to the development of better and more economical methods for kiln drying lumber, veneer and other forest products.

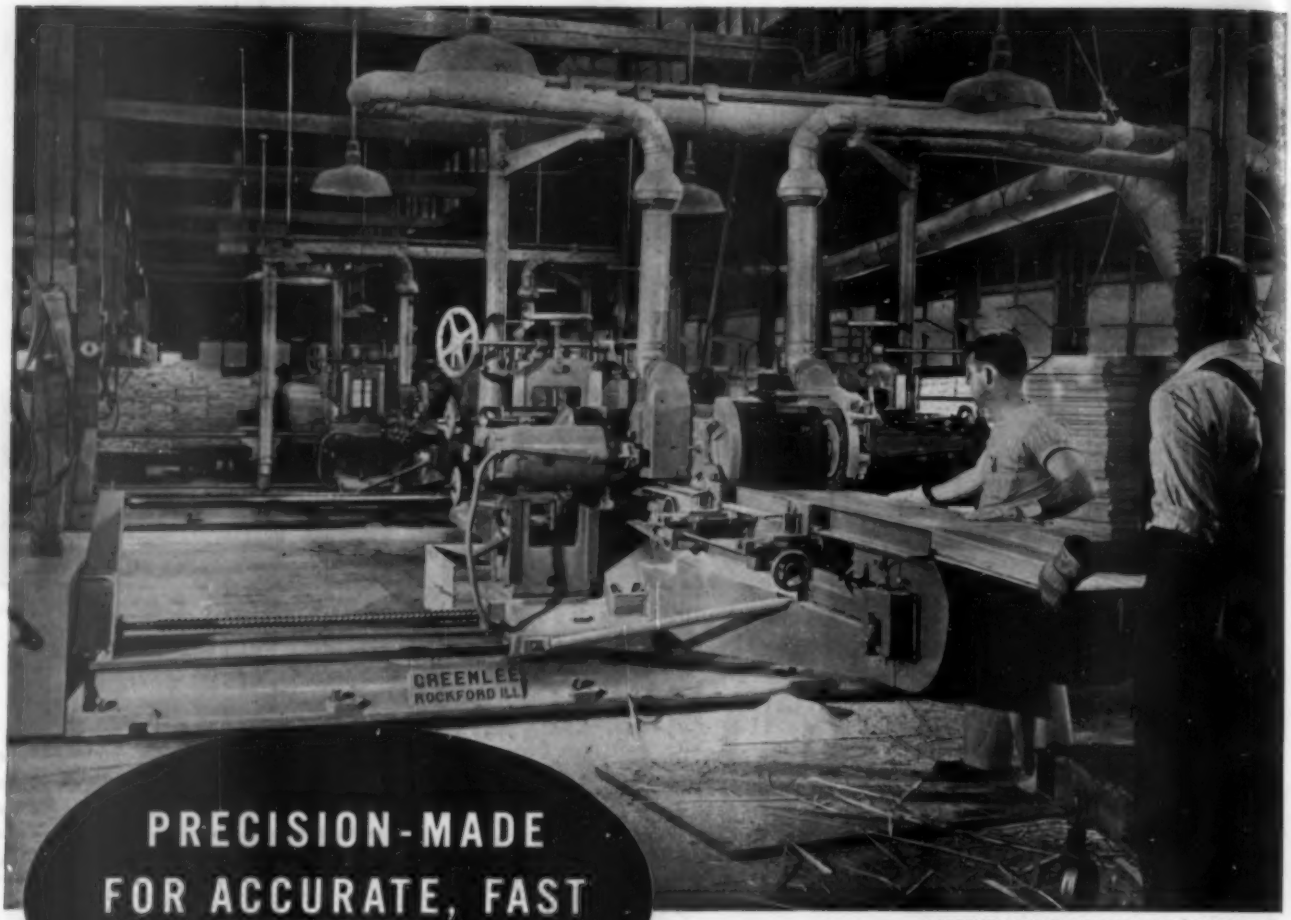
Beginning in 1906 as a partner of Lafayette Moore, better known as "Dry Kiln" Moore, and since 1922 chief executive officer of the Moore Organizations, he has played an important part in placing lumber seasoning on a scientific basis.

However, he attributes his success largely to the able assistants and experienced dry kiln engineers who make up the Moore Dry Kiln Co.

During Mr. Williams' business career, old-type natural draft, high temerature kilns have gradually been replaced with the reversible cross-circulation drying system, which permits boards to be stacked tight edge-to-edge on kiln loads, thus increasing holding and drying capacity over 40%. This system has also reduced stacking and drying costs.

His efforts have been directed to the drying of forest products to the

(Continued on page 86)



GREENLEE DOUBLE CUT-OFF SAW IN OPERATION AT STATESVILLE PLYWOOD AND VENEER COMPANY

PRECISION-MADE FOR ACCURATE, FAST PRODUCTION

. . . Greenlee No. 542 Electric Double Cut-Off Saw

"We wish to congratulate you on the fine double-end trim saws recently placed in operation here. They show beautiful workmanship and they really do a fine job."

That's what Mr. Elbert M. Shelton, president of Statesville Plywood and Veneer Company, Statesville, N. C., has to say about their new GREENLEE No. 542.

Reasons are many why the GREENLEE No. 542 does such smooth, accurate work . . . and at high speed! First is because each one is made so sturdily ...built to handle the work with ease and stand up under production requirements at high speeds.

Next is its "watchwork like" construction and the precise setting arrangement which permits making adjustments to a fraction of 1/64". Dials show the exact setting of the movable housing, and the machine cuts exactly to the size indicated.

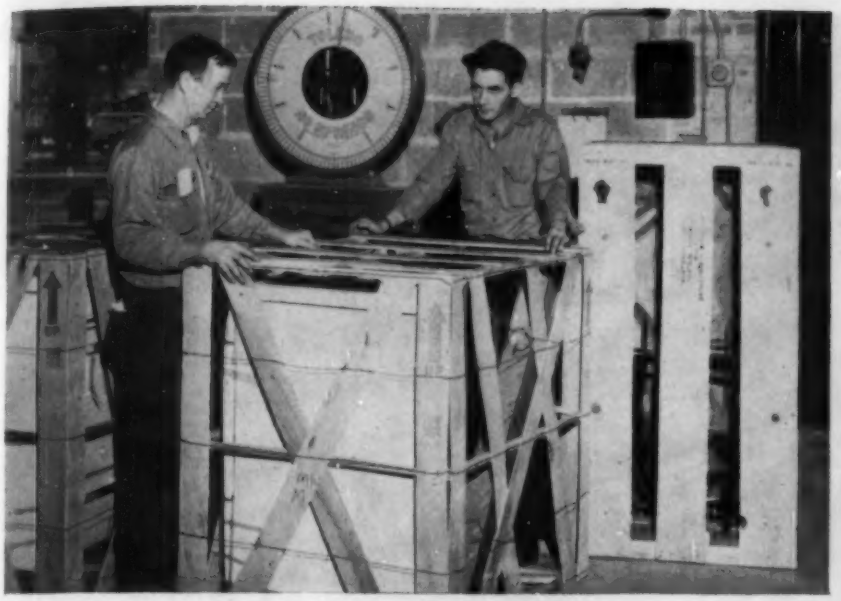
And remember, too, the GREENLEE No. 542 is extremely versatile. In addition to its double cut-off operations, with attachments it will handle your shaping, relishing, tenoning, dadoing or scoring.

Get all the details on this precision machine today. Write Greenlee Bros. & Co., 1924 Twentieth Avenue, Rockford, Illinois.

MACHINERY & TOOLS

GREENLEE

GREENLEE WOODWORKING MACHINERY: MORTISERS • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING and BORING TOOLS



BOXES ARE DESIGNED especially for each product.....

AND TESTED rigorously.....

Testing Laboratory designs boxes that sell

Applying scientific methods to packaging for specific products and shipping conditions builds sales.

Briefly

Read how research combines with design to ask and then answer numerous questions about packaging products. The answers frequently mean better protection and less shipping weight.

Recently at Des Plaines, Illinois, General Box company opened a new specialized laboratory which, among other things, is equipped to design for customers and prospects the best possible container to fit specific products and shipping and handling conditions.

Manufacturers with a packing problem ship their product to one of these laboratories where a design engineer studies all its aspects, asking a battery of questions, such as: How is it packed on the shipping line or in the shipping room? How is it shipped? How is it warehoused? How high can it be stacked? Is it handled with mechanical equipment or by handtruck? Is it a domestic or export package? Is it a delicate item (like porcelain enameled surfaces), that must be fully protected by the shipping container or is it a rugged item that can contribute some strength to its container? What freight codes and classifications cover the product? With each of these answers in mind he actually engineers the most economical package that will safely carry the product.

Reduction of gross weight is one of the advantages almost certainly gained. The amount will vary with the former method of packing, and other conditions but savings up to 20% of the gross shipping weight are not uncommon.

A cross section of four random selected designs showed that the gross shipping weight was reduced from 410 to 364 lbs. in one case, another dropped from 120 to 104, a third went from 95 to 83 lbs. and the fourth from 39 to 34 lbs.

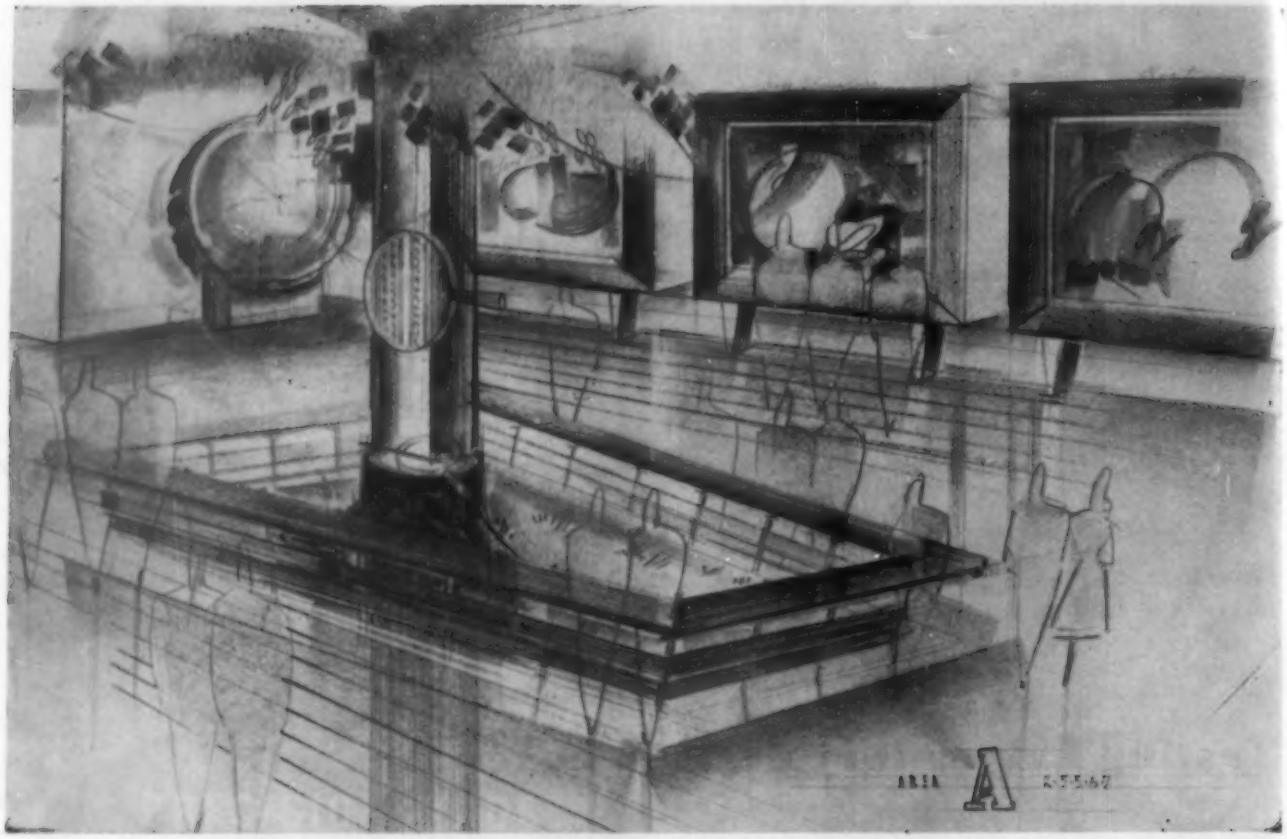
The importance of weight savings means different things to different shippers and even to different men in various capacities in the same firm. To the management man it means dollars saved to add to an elusive profit. To the merchandising man in a very competitive line it means added distance that he may ship his product and still sell it on a competitive basis.

Designing is only one of the major functions of the laboratory which occupies over 10,000 square feet of modern, well-lighted space. It is divided into four separate sections; one contains testing equipment; another is used for the manufacture of sample boxes; the third contains a research operation; the fourth is devoted to design and creation of boxes.

The testing section contains practically every known piece of equipment for testing shipping containers and determining their ability to deliver merchandise safely to its destination. Two revolving testing drums simulate the rough handling a package receives in transit in order to derive its ability to "take it". The smaller one of the two, a seven footer, takes packages up to 20" long and 250 lbs. in weight.

The other, a fourteen foot monster, weighing over 27,000 lbs., is set in a special pit to make it easier to load and unload. It will tumble packages six feet long and 800 lbs. in weight. A Conbur Tester finds out how the package will react to the jarring impacts produced by sudden stops. Drop tests, vibrators, compression tests, etc. are all available to try to tear shipping containers apart to see how long and

(Continued on page 82)



"LIVING TREE ROOM" as it is pictured in the artist's sketch.

Outstanding Hardwood Exhibit now being prepared

Burr Green explains how modern display techniques will make industry display both entertaining and educational.

FAMOUS SCIENCE AND INDUSTRY Museum in Chicago will be exhibit's home.

"A World of Hardwoods for a World of Better Living." That's the working title, and it pretty well describes one of the most forward-looking promotion devices the wood industry has ever thought up.

The title labels a $350,000 exhibit now under construction at Chicago's Museum of Science and Industry—an exhibit initiated and underwritten by the Hardwood Industry. This is public relations at its best.

The hardwood exhibit fits into the Museum's general plan of visitor-participation exhibits. Second largest in the Museum, it is a working, acting, doing show which teaches by numerous audio-visual-physical methods just what Mr. Joe Public and Son, and even Mr. In-the-Trade, ought to and want to know about hardwoods.

How did this exhibit get started? Who is making it tick? What's it like? What does it hope to do? When will it be ready? These are questions which naturally come up when an exhibit of such magnitude is introduced.

Starting with the last question first, the exhibit will open this sum-

mer, in time for the great influx of "See Chicago First" vacationists. Officials at the Museum estimate that each month next summer, a quarter of a million in-and out-of-towners will visit there. (In one day last year, 27,705 visitors went through the Museum. License plates from 45 states were counted in the parking lot.) If this exhibit has the pulling power of some of the other new exhibits, it will draw better than 90 per cent of these people to look, listen, touch.

This leads logically to the question, what does the hardwoods exhibit hope to accomplish? A couple more statistics will answer that. Last year 4,096 grade school groups, or 160,000 boys and girls, went through the Museum, many of them traveling to Chicago expressly for that purpose. Allegan, Michigan gathered all 1,200 school children in the county together for the trip. Another 1,625 took a special train from Missouri and Iowa to look and learn.

The school children's liking for the Museum has created one surprising problem. The kids "play hookey" to visit the exhibits and frequently must be rounded up and sent back to their regular classes. There are no records

(Continued on page 28)

Diagram and Key to Exhibits

AREA "A"

A1	Entrance
A2	Rail
A3	Animated Tree
A4	Photomural
A5	Transparency & Frame
A6	Transparency & Frame
A7	Transparency & Frame
A8	Redwood Slab

AREA "B"

B1	Model Platform
B2	Model
B3	Movie Screen & Projector
B4	Ramp
B5	Wood Sample Wall
B6	Adhesives Wall
B7	Properties of Adhesives 3-animated Displays
B8	Wood Figure Types

AREA "C"

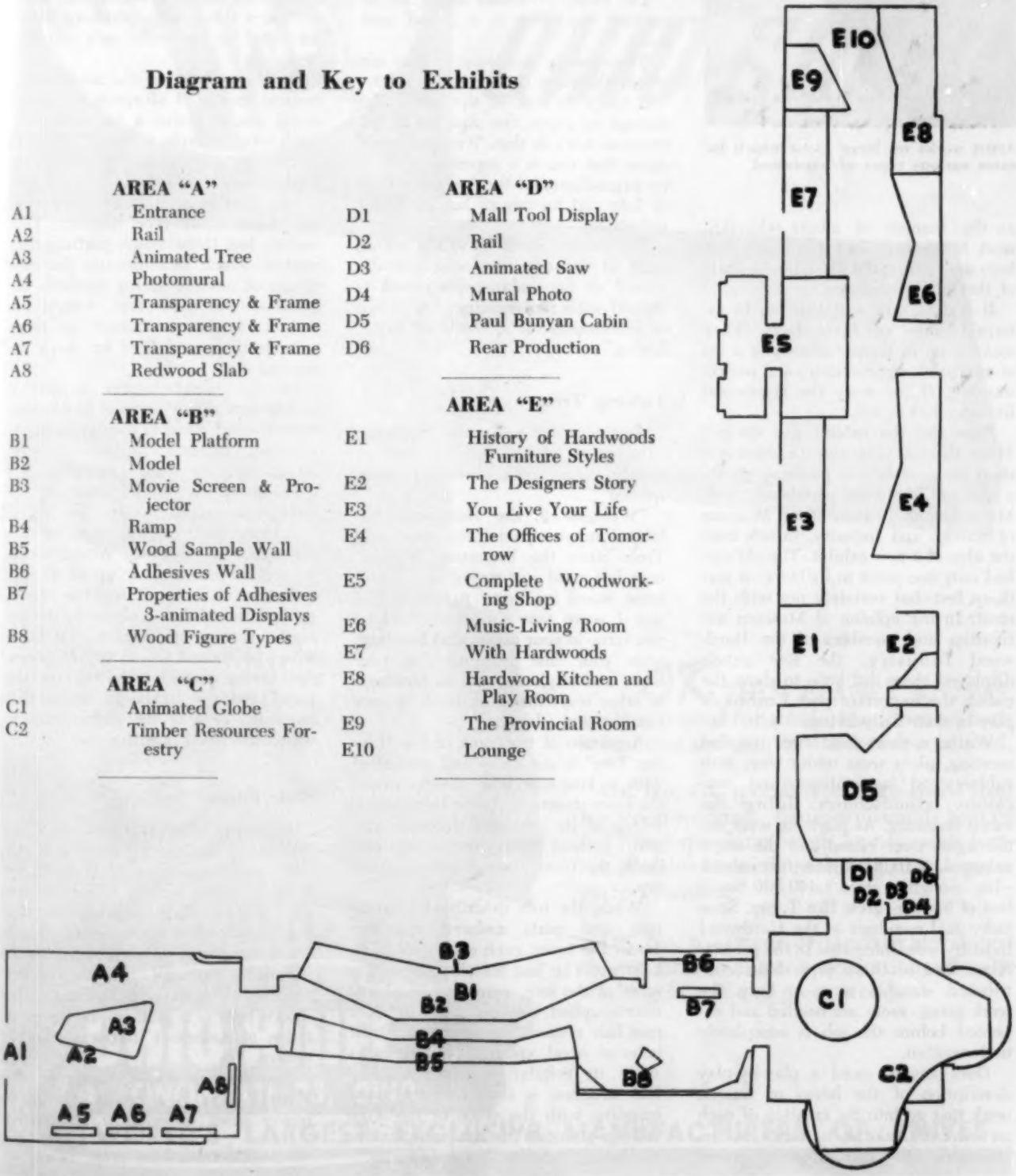
C1	Animated Globe
C2	Timber Resources Forestry

AREA "D"

D1	Mall Tool Display
D2	Rail
D3	Animated Saw
D4	Mural Photo
D5	Paul Bunyan Cabin
D6	Rear Production

AREA "E"

E1	History of Hardwoods Furniture Styles
E2	The Designers Story
E3	You Live Your Life
E4	The Offices of Tomorrow
E5	Complete Woodworking Shop
E6	Music-Living Room
E7	With Hardwoods
E8	Hardwood Kitchen and Play Room
E9	The Provincial Room
E10	Lounge



Artist works on large globe which locates various types of hardwood

on the number of adults who skip work to go there, but it is a fact that boys and girls make up only one-third of the total attendance.

It doesn't take a statistician to interpret some of these facts. They mean a lot of people absorbing a lot of education, appreciation, and understanding of the story the Hardwood Industry has to tell.

How did the exhibit get started? More than a year ago (a relatively short time, as exhibit planning goes), a group of hardwood people met with Major Lennox R. Lohr of the Museum of Science and Industry, to talk over the idea of a new exhibit. The old one had only one point in its favor—it was there first—but certainly not with the most. In the opinion of Museum authorities and members of the Hardwood Industry, the few panels displayed there did little to show the public the important part hardwoods play in their daily living.

Within a short time after the first meeting, plans were under way, with cabinetwood associations and machinery manufacturers doing the initial financing. As planning went on, the sights were raised and the scope enlarged. A 10,000 square foot exhibit —big enough to store 1,440,000 board feet of lumber—grew like Topsy. Soon individual members of the Hardwood Industry were interested in the project. A number of these firms have contributed sizeable sums to keep the work going; more are needed and expected before the job is completely underwritten.

Does anyone need a play-by-play description of the hours of unseen work that go into the creation of such an exhibit? Take it in terms understandable to the average home-builder. Say you are building a conservatively designed home—at about $35,000 in today's market. You know how much planning—how many hours of work go into such a job.

So you figure that a $350,000 exhibit takes about 10 times as much planning and work as one $35,000 home. Right? Not by a long shot! Houses have been built before and there are certain fundamental needs they must meet, such as shelter, comfort, convenience, beauty, function.

Do these yardsticks apply to an exhibit? No. This is a brand new baby.

There's only one way to find out which the baby is—beauty or beast—and that's to look at the plans, the dreams on paper, the skeleton of the creation. Let's do that. We think you'll agree that this is a superior piece of propagandizing for the American Way of Life and for one of her life-blood industries.

The exhibit starts its subtle selling right at the entrance, which is designed of fine cabinetwoods and is topped with sign reading, "A World of Hardwoods for a World of Better Living."

Talking Tree

As the visitor enters the first room —the room of the Living Tree, a stately white oak centered there speaks:

"Welcome to the Hardwood Exhibit. I am your friend, the Hardwood Tree. Since the beginning of time, man has used my strong and handsome wood for many purposes. Today I serve you almost everywhere you turn—in your homes and buildings —for your fine furniture—for your boats and airplanes—and in hundreds of other ways that add much to your comfort and pleasure."

A portion of the trunk of the "Living Tree" is cut away and magnified with a king-size lens which reveals the inner structure. As the tree speaks, telling of its intricate "digestive system," colored lights running up and down the trunk show the flow of the sap.

While the tree describes its structure and parts, colored translites across the room, each eight feet high, light up. The first translite shows the roots of the tree, revealing in photomicrographed section the complex root hair system. The next is a ½-inch cube of wood, enlarged 450 times to show its cellular construction. The leaf structure is shown in the third translite, with the voice of the Tree calling attention to the complexities of these miniature "food factories."

In this same room, there are several photo murals, each 11 feet high, which picture northern, central and southern hardwood timber types.

Leaving the room of the Living Tree, the visitor moves on a slightly elevated ramp to the modelroom, where he can view a model sawmill and veneer and panel plant in action. Blending in with the foreground is a realistic, handpainted mural backdrop of a typical sawmill locale.

Centered above the model display is a screen showing sound and color movies of the actual operations being simulated by the model men and machinery.

On the wall facing the model mill, vertical lengths of 85 species of hardwood lumber form a louvred wall. Each wood sample is clearly marked to show its species and the part of the world where it is found.

The next room features adhesives and wood figure type displays. This section has three visitor-participation models which demonstrate the efficiency of modern gluing methods for plywood and show that, weight for weight, plywood is stronger and more suitable than mild steel for many industrial uses.

In the wood figures section a mobile unit slowly turns of handsome, figured wood panel to display its light-catching qualities. Other figured panels show the wide range of figures and infinite number of patterns obtainable in natural woods.

A large world globe attracts the visitor to the "Woods of the World" room. A circular panel, made up of 48 different woods from all over the world, girdles the globe, and pinlights are scattered over its surface. To learn where any one of the 48 woods grows, the visitor pushes a button on the panel and the lights go on in that particular area of the global map to which the wood is native.

Slide Films

Prominently featured in this "Woods of the World" room is a section on "America's Woodland Wealth." Here, color transparencies and graphic maps picture the rich hardwood timber resources of America. A sound and slide film presents an American farmer's true-life experiences with woodland farming. Also shown here is a pictographed presentation of America's timber marketing system.

Just beyond the "Woods of the World" room is a realistic setup of power saws, showing a chain-drive

(Continued on page 82)

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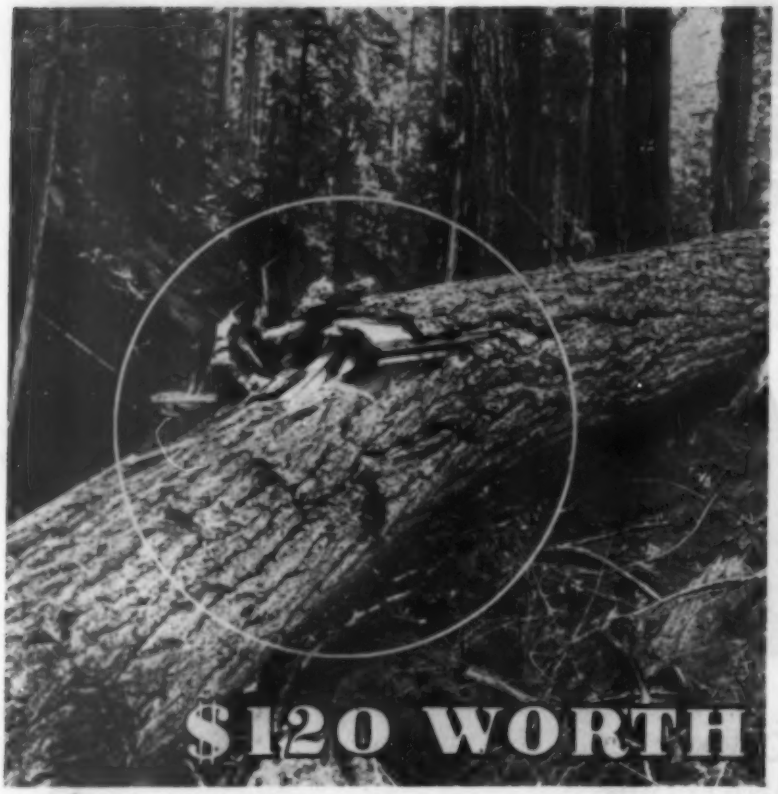


Modern machinery makes it possible to solve one of logger's oldest problems — how to fell "leaners" without breakage.

$120 WORTH of MARKET VALUE Lumber Saved by New Felling Method

1. HIGH CLIMBER attaches cable to tree to be cut.

2. "CAT" assigned to modern felling method applies pressure to tree as chain saw cuts trunk.

The latest trick for falling trees, developed in the Pacific Northwest's Douglas fir region, would make even tough Paul Bunyan admit that his boys have done him one better. The brawn of Babe the Blue Ox has been outmoded by sheer ingenuity.

The new technique is just one of the many things private land owners are doing to stretch out their backlog of choice old-growth Douglas fir. It is part of the conservation-conscious trend in modern tree farming and logging.

As a result of this new trick in falling old-growth fir timber, the traditional "Timber-down-the-hill!" chant which long has echoed through western forests to signal the drop of another mature tree giant may be replaced by a modernized twentieth century version, "Timber-up-the-hill!"

This revolutionary method of tree falling literally repeals Newton's sacred law of gravity. The new technique, used on steep topography, drops 200-ton Douglas firs to the ground without breaking their 150 to 200 foot long columns of precious wood fiber, matured to choice quality by Nature during life spans of 300 to 500 years. Split or shattered tree lengths, resulting from too terrific impact with the ground, mean fewer 32 to 42 foot logs. Fewer logs mean a waste of premium-priced raw material required for high-value lumber, select plywood faces and large structural timbers.

There has been no basic change in the *method* of falling trees since America's pioneers first slashed farms out of timber-covered lands. Power saws have speeded up the operation, but haven't changed the falling principle. The logger has always had to bow to Newton and his changeless law. A tree's direction of fall has been determined largely by its "lean" or tilt from an imaginary vertical line.

In a natural old-growth forest, particularly Douglas fir, few trees reach maturity standing truly "plumb." Most have a gravity-poised "lean" which literally balances 150 to 200 tons of dead weight in the air until the faller severs the anchoring wood fibers. The tree then falls in the direction of major lean. The faller usually can do little to alter that predetermined falling path, except in the cases of slight lean, where wedges driven at stump level shift the balance point, or center of gravity.

Weyerhaeuser loggers, among others, thought something could and should be done to salvage this "unavoidable" waste in logging. The prize was well worth the effort, because tree breakage in logging may exceed fifteen per cent of the cruised merchantable volume per acre. Experimental work was begun by loggers with some real radical ideas on how to upset Newton's inviolate law of gravity.

The result is a new tree falling technique, first developed at Weyerhaeuser's Vail, Washington, tree farm in 1949, under the supervision of logging superintendent Buck Reichel. But logging superintendent Clyde A. Corman at Weyerhaeuser's Longview branch and Charles W. Preppernau at Springfield, Oregon, weren't far behind Reichel in putting the new log conservation technique to work on their own mature timber areas.

Today the method has been proved a sound, good, safe and practical logging practice. Industry men who have seen the new logging technique hail it as holding a real promise for stretching the Pacific Northwest's nine million acre supply of choice and ripe old-growth timber.

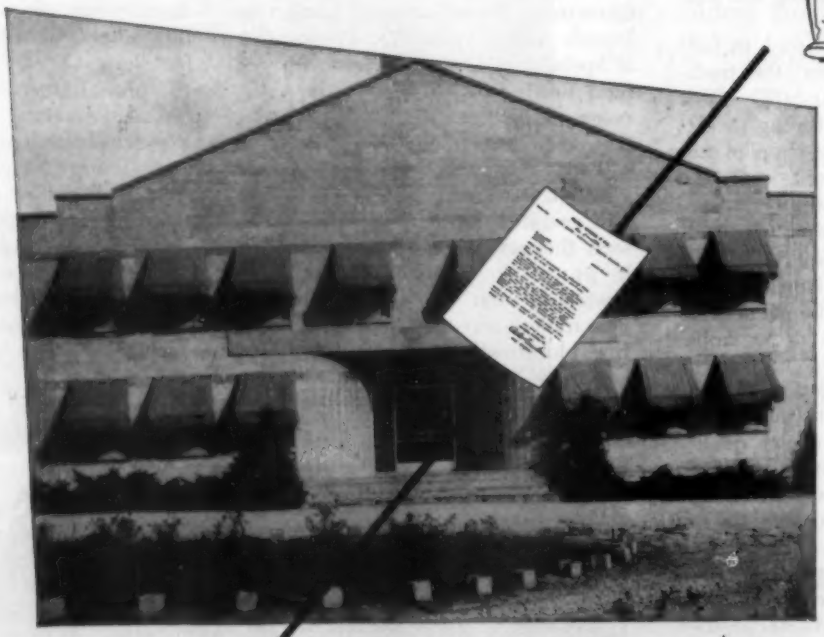
Called "uphill tree falling," "tree pulling" or "uphill tree falling with cables" by those who have witnessed the process in action, the new timber-toppling trick is indeed a revolution in falling trees growing on steep topography. As used by Weyerhaeuser, the technique mechanically forces 200-ton Douglas fir "leaners" growing on steep slopes to fall *uphill* instead of *downhill*. In toppling uphill the tree's 150 to 200 foot trunk falls through a smaller arc, and therefore suffers less shattering impact with the ground. All or most of the tree remains in one piece and can be bucked into sound, split-free logs, 32 to 42 feet long.

Uphill falling is only part of the board-foot saving treatment given by Weyerhaeuser loggers when they harvest mature timber. Designed to stretch supplies of premium grade old-growth Douglas fir and hemlock, the overall package treatment at Vail, for instance, consists of prelogging and progressive logging, the latter being a multiple harvest which may be repeated several times from one spar

(Continued on page 60)

3. ORDERLY ROWS of felled trees lay unbroken after being felled by new system.

IT TAKES LESS THAN AN HOUR



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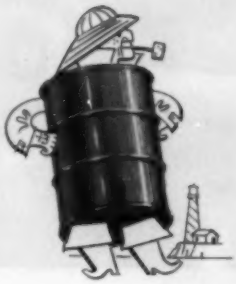

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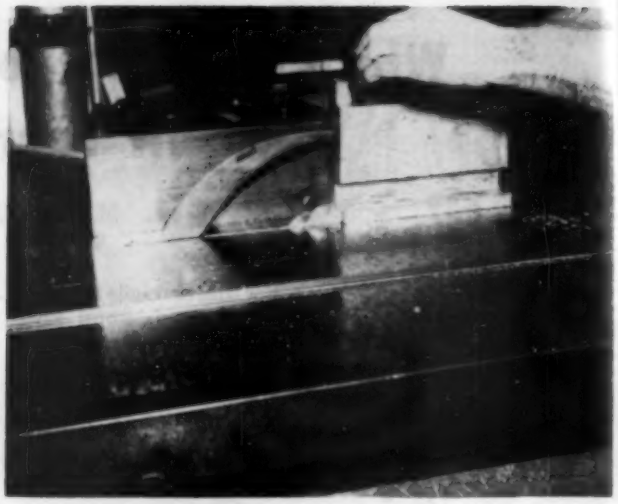

More on how to maintain the many saws you use

Numerous Sizes and Kinds of Circular Saws Cause many maintenance problems. In this article the author tells the equipment needed to keep your saws in first class shape.

Part III

by Paul Graham

Most circular saw swaging is done at the bench with a bench attachment where the swage is heavy but there are also many circular saw swages made for swaging saws on the arbor.

Swaged teeth of the circular saw are side-dressed or shaped also in a similar manner as those of large band saws, using similar side-dressing files and shapers. The side-file is used where both the swage and shaper are not used but does not provide the same reinforcement to the teeth. The shaper forms the rough swage tooth by pressure action so that all teeth are automatically pressed into the swaged portion of the tooth for a sturdier, more uniform tooth.

Positioning Saw

A great many non-standard teeth put on circular saws by saw filers must be hand-filed although there are some that are adapted to filing at the automatic filing machine. The chief difference between the bandsaw and circular saw filing machine is in positioning the saw for feeding to the filing arm. The circular saw is placed on an arbor at the front of the machine and each tooth is fed around to the proper position for filing. The machine is properly timed for accurate relationship between lift cam, feed cam and oscillating cam and is designed so an oblique elliptical movement is given to the filing arm to approximate hand filing. This saw filing machine is used chiefly to file fine teeth of cross-cut and trim saws.

Manually-operated Gummers

Bench and other manually-operated gummers and sharpeners have been designed exclusively for sharpening circular saws but many of the larger automatic sharpeners are combination machines used both on band saws and circular saws. Best results when working on large diameter saws seem to be obtained by the use of an automatic saw sharpener designed for a particular type of saw.

The chief difference between the combination and single-purpose machines is that the latter have no automatic means for swiveling the grinding head to bevel cross-cut teeth. Combination gummers and sharpeners provide a wide range of adjustment in shape and position of cams or tooth forms, stroke of feed pawl, inclination of grinding wheel head, and other parts which in combination with various diameters, thickness and shape of grinding wheels permits handling any type of circular saw within the capacity of the machine.

The simplest form of saw gumming and sharpening device in use is probably an attachment that can be placed on any grinding wheel stand and is adjustable to give the teeth the required shape and to suit the bevel on the wheel. A radially swinging arm is pivoted on a secondary arm which is adjustable to form the teeth and carries the saw to and from the emery wheel. There are also a number of bench saw grinders which operate on a similar principle, with the swinging arm saw holder incorporated into the base of the grinder and the arm adjustably mounted on the pedestal.

Hand-type Sharpener

A type of hand sharpener and gummer used where there are a number of sizes and kinds of saws to be ground incorporates a grinding head mechanism mounted on a vertical post, as a boring head is mounted on the drill press or post borer, and spring-supported to absorb shock.

The saw to be sharpened is held in a saw carriage mounted on a floor pedestal and attached at its top section by a metal cross arm bolted to

In Brief

This month we continue with the tools used in the sharpening and care of circular saws. In following issues the care of other types of cutting tools will be covered.

the post. The grinding wheel head pivots and the saw carriage is adjustable to suit the diameter of the saw and type of tooth to be cut and may be locked in position for either square or bevel grinding. The same features have been incorporated in an integrated floor-mounted machine which will bevel cut-off saw teeth to 45 degrees in either direction.

Automatic Methods

Automatic machines used for gumming and sharpening circular saws operate much like those used for sharpening band saws. Most of them are full universal machines with hand wheel control over feeding and lifting mechanisms to permit adjustments to be made while the machine is in motion to eliminate the need for tedious cut-and-try methods and to increase the output of the machine. They all use cams or tooth forms with various round or elliptic faces designed to produce required tooth shapes in combination with the shaping effect of the edge of the grinding wheel. These machines generally use the rotating type of cam for controlling the feed finger and the same type of cam to control the head action.

The thickness of grinding wheels used to sharpen circular saws usually varies from ⅜ to ¾-inch, with a few of the larger saws using 1-inch wheels. Their edges are round, bevel or V-shaped. The round wheel is used on large rip saw teeth and head saw teeth to match the bottom of the gullet and the bevel edge wheel is used generally to sharpen standard rip saws. The bevel edge wheel is also used to grind the larger cross-cut teeth but the V-shaped wheel is used on the smaller teeth.

Files Needed

In plants where hand filing is the order of the day it is almost impossible to list a complete set of files used. A list prepared by one of these plants shows the following: round rat tail files, blunt mill files, triangular files tapered for filing teeth at 60 degree angle: taper, slim taper, extra slim taper, double extra slim taper divided according to saw points per inch: 5 points—7-inch regular taper, 6 points—8-inch slim taper, 7 points—7-inch slim taper, 8 points—6-inch slim taper or 7-inch extra slim taper or 8-inch double extra slim taper, 9 points—6-inch extra slim taper or 7-inch double extra slim taper, 10 points—6-inch extra slim taper, cant saw files for sharpening teeth at less than 60 degree angle, and cross-cut files with rounded back for filing cross-cut saws, a file card for coarse file cleaning and a file brush for finer files.

Saw fitting operations used on combination saws and other special types are similar to those of the standard type saws although where both cross-cut and rip teeth are incorporated in a single saw, two operations may be required instead of a single passage through the automatic machine. The varying tooth heights may also require the use of a raker gauge in sharpening, as with the planer saw and dado cutter. This gauge consists of two clips which are slipped over the saw and a filing anvil that is adjusted to proper tooth height below the cross-cutting teeth and held securely by a thumb-nut.

Tooth Bevel

On saws where tooth bevel is of prime importance, such as smooth trimmer saws, a tooth gauge is provided which fits against the face of each tooth to accurately check the angle. These saws may be filed by hand but the 45-degree face bevel is best maintained with an automatic sharpening machine that mounts a grinding head that will swing to give this bevel. A cant saw file is usually used to file this type of saw.

Hammering the circular saw requires considerable know-how and skill as well as the proper equipment. The hammers used are of a similar type but heavier than those used for hammering band saws. Leveling and tensioning require the use of dogface and crossface hammers and the cross-peen hammer is sometimes used. Hammers from 2 to 3 pounds are usually heavy enough for use on small saws but heavier hammers, up to 5 pounds, are used on larger saws.

Usual equipment also includes a crown face anvil, weighing from 115 to 250 pounds and mounting a hard chilled steel face, a hammering bench, fitting-up bench, leveling blocks, and a variety of straight edges and tension gauges. Where large saws are to be handled a running board or back rest will also be required. Straight edge lengths range from 6 to 60 inches according to saw diameters.

Many plants use the adjustable tension gauge, in 24 and 30-inch sizes which provide both a straight edge and tension gauge by means of a steel wedge and thumb nut arrangement. A large 60-inch floor level is sometimes used for very open saws and a sturdy mandrel bench is a handy accessory where large saws are to be fitted.

Inserted tooth saws are commonly serviced right on the arbor for general saw maintenance. Hammering treatment for the body or plate of the saw is the same as for any other saw but installation and fitting of bits and shanks is definitely a special operation. A cold chisel is generally used to start the bit and shank before removing them with the wrench. Inserting new bits is a precision operation requiring proper alignment with the shanks and due care in heading up the rivets enough to make them tight without stretching them sidewise or peening the plate.

It is sometimes necessary to stretch a tooth, when teeth are loose in the sockets, which is usually done with a rounded edge of a cold chisel on an anvil while the teeth are in the plate. If shanks are loose, a round bar is used to tap them tight. When they do not stay tight, it is sometimes necessary to hammer them at the flange end—not in the V. If the inner circle at the flange is rounded by wear, it is filed straight across to bring out the sharp edges. A sharp hammer is always used to peen loose shanks.

It is seldom necessary to swage the bits, as light filing on the underside is all that is required for proper clearance when they are properly shaped and installed, but where required the bits can be swaged in the plate after filing with an upset swage and a light hammer. In hand filing bits no filing is done in the throat, the face is filed lightly to sharpen and the back is filed only enough to remove the burr. Special chisel-bit files are provided for filing.

Hand-driven sharpeners are used as semi-automatic grinders to grind inserted tooth saws that are adjustable to any diameter saw and any pitch or tooth line. A feed finger automatically locates the grinding wheel in relation to the saw tooth to grind each tooth exactly alike and the grinding wheel is oscillated up and down on the face of the saw teeth the same as with any power-driven machine. The operator oscillates the grinding wheel by raising and lowering the hand knob which is turned slightly at the same time to actuate the feed cam. Portable power-driven units are also available which eliminate manual manipulation for oscillation and feeding.

Gang Saws

Gang saws are fitted much the same as band saws with standard equipment, such as automatic sharpener, stretcher roll, filing clamp, swage —eccentric or top swage, side file or swage shaper, hammers, anvil, straight

(Continued on page 61)

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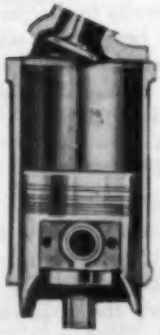

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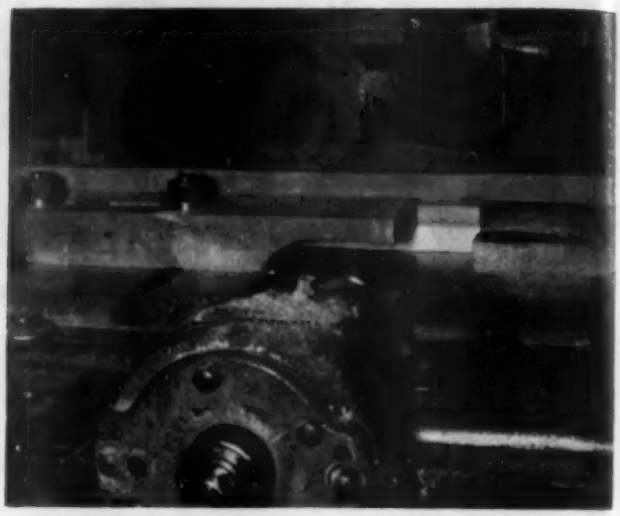

Carbides and the Wood Industry Get Together

To make best use of carbides for cutting knives and saws the problems inherent in carbides must be understood.

In Brief

The woodworking machinery industry is presently taking big, progressive steps forward in giving the woodworking industry modern machinery that fits today's production and cost demands. Mr. Brooks first explains the factors contributing to this advance. He then gets down to brass tacks on some of the design requirements that must be met, particularly as regards the use of carbides for wood cutting tools.

Mr. Brooks concludes that co-operation, co-ordination and ingenuity will be needed to assure the future success of carbides in the wood industry.

Problems confronting the woodworking industry today are similar to those which the metal working industry faced some 21 years ago. Over 65% of the woodworking equipment in use has been rebuilt or repaired, the latter often consisting of little more than a paint job. Yet as early as 1929 manufacturers of woodworking machinery had developed and applied such features as precision ball bearings, high arbor speeds, faster work feeds and other advantages not then incorporated into the average metal-working machine.

The introduction of carbides to the metalworking industry, with its high speed production potentialities and ability to machine the new high alloy steels, brought demands for more efficient machinery; that is, machinery with sufficient power to maintain the cutting speeds and feeds possible with tungsten carbides. The machine tool industry answered these demands with machines of increased speeds, power, stability and rigidity.

Reasons for Advancement

Today, at least three factors are contributing to the advancement of engineering, production, cost analysis and merchandising in the woodworking industry: (1) An increased number of trained engineers have entered the industry; (2) The introduction of new materials, such as plastics, fibres, ferrous and non-ferrous metals, and photographic sheets —plus competition from within the industry itself—has produced economic pressures necessitating improved design, production techniques and finishes; (3) The application of carbide cutting tools is causing a revolutionary change in wood machining techniques.

While the problem of the metalworking and woodworking industries are similar, the materials with which they work are not. The chemical-metallurgical components of metals are predetermined and controlled to reasonably close limits. Specific grades of steel are the same, regardless of who produces the steel. Consequently, it is possible to determine and specify rates of feed, cutter speeds and the number of teeth per cutter with sufficient accuracy.

No such stability of material exists, however, when we attempt to set

R. D. BROOKS, Woodworking Tool Development Engineer, Firth Sterling Steel and Carbide Corp.

machinability standards for wood. There are frequently greater variations between trees of a single specie than between different species. For example, southern Indiana soft textured oak is less difficult to machine, considering tool wear, than are some grades of soft woods. Certain grades of oak are more difficult to machine than teak. Density, specific gravity, moisture content and methods used in cutting the lumber will vary to an almost unbelievable degree. These variations are largely responsible for the lack of any generally acceptable standards for machining wood.

A brief outline of the design requirements for carbide wood cutting

(Continued on page 62)

Let's Review Gluing Techniques

Use this story to check whether your gluing is being carried out under proper conditions.

Proper conditions are just as important for gluing as the adhesive used. The lumber should have the proper amount of moisture-content, evenly distributed throughout. It should be free from case-hardening and other stresses, and should be surfaced smoothly to a uniform thickness.

The thinner the lamination or ply the lower the moisture-content should be. As a general principle, the moisture-content of the stock at the time of gluing should be such that when the water added with the adhesive is combined with the moisture in the wood it will equal the average moistrue content of the wood in service.

Moisture-content values of 5 to 8 percent are O.K. if the stock is ¾-in. or more thick and if the product is to be used for furniture, interior trim, and the like. If the product is not to be used in heated buildings, then a 12 percent moisture-content is satisfactory.

When working with thin veneer laminates, the moisture-content should be as low as possible, because the water absorbed from the glue will comprise a relatively high percentage of the weight of the piece.

Machining Tips

Machine surfacing is generally best for lumber that is to be glued. The surfaces should be smooth and true, and the plies or laminations of uniform thickness. (Hand surfacing is liable to produce local irregularities and uneven thickness.) Avoid planer marks and other evidences of poor machine adjustment as it should be unnecessary to scratch, tooth plane, or sand before gluing. Frequently these operations work to the gluer's disadvantage.

Veneer should be uniform in thickness in the same piece, smooth and flat, and free from large checks, decay, short grain, and other defects. Sliced, rotary, and sawed veneer are all suitable for plywood panels provided the veneer is properly made. Joint strength is reduced, however, when badly checked panels are used for cores.

Sufficient glue spread and a correct balance between adhesive consistency and the amount of pressure used are the two major considerations in gluing. Too low a consistency results in a starved joint; too high, in a dried joint. Starved joints are usually the result of mixing the glue too thin; and dried joints are most commonly the result of too much delay between spreading and pressing.

Proper Spreading

For casein, animal, and starch glues (in assembly gluing), about 77 pounds of wet glue per 1,000 sq. ft. of joint area (35 grams per sq. ft.) should be spread evenly on one of the two contact faces of the joint. In coating both contact faces, about 25 percent more glue should be used. More or less adhesive spread than the above is undesirable, but an excess is safer than not enough.

Machine spreading should be used in preference to hand spreading wherever possible. Double spreading is known to be more reliable, especially under adverse gluing conditions of long assembly time, high wood temperatures, high room temperatures, or rough surfaces. Under normal conditions, a certain amount of glue squeeze-out at the joint line is to be permitted.

In plywood manufacturing, where protein glues are used, spreads are normally much lower than normally found in assembly gluing. In the making of moisture resistant Douglas fir plywood, wet spreads of 55 to 60 pounds per 1,000 sq. ft. of single glue line for cold press plywood, and 35-40 pounds per 1,000 sq. ft. of single glue line for hot press plywood, are common.

Pressure Applications

Clamps, presses, and other mechanical devices should be used to apply pressure wherever possible to do so. The object is to bring the wood surfaces into intimate contact with the glue, to force air from the joint, and to spread the glue out into a continuous film between the wood layers.

The amount of pressure should be governed by the consistency of the glue at the time of pressing as well as the species of wood being glued.

For softwoods such as spruce, a pressure of 100 to 150 p.s.i. is good, and for hardwoods such as ash, 150 to 200 p.s.i. should be used with a relatively thick glue (represented by average casein glue).

As close a check as possible should be kept on the amount of pressure applied. Table 1. gives the pressure data for screw clamps and other hand-clamping devices.

Where relatively thin pieces are being glued, blocks or cauls should be used between the clamps or press and the layers being glued. This distributes the load from the point of contact to other parts not directly under the load and also prevents clamps from crushing the wood. It is essential that the cauls and blocks be true and uniform in dimension.

Aside from the difficulties encountered when these cauls are not used properly, other principal causes of unequal pressure on joints are: irregular surfaces of the wood pieces being glued; unequal thickness or width of stock; improper spacing of the pressure-bearing members, and deflection or other imperfections in the press, clamps, or pressing equipment.

Clamps or other devices should be kept closely adjusted for a short time after the first application of the load in order to insure proper pressure maintenance. The pressure first applied to the glue joints tends to decrease as the glue squeezes out or distributes itself in the joint.

Duration of the Pressure

For room temperature gluing, pressure should be maintained for four hours or more. Overnight pressure is even better when possible. Where thick layers of absorptive wood are being glued, the pressing period may be reduced to two hours, but an additional conditioning period must be provided before subsequent machine operations are begun. Longer pressing periods are desirable, as this enables the glue joints to reach a higher proportion of their final strength before being disturbed.

Since the movement of water from the glue line is one of the main factors in the increase in joint strength for animal and starch glues, short pressure periods are favored by a concentrated glue, a thin spread, warm, dry, thick layers of wood, and a warm room.

The setting reaction in the case of moisture-resistant casein soybean, and

(Continued on page 42)

Glue Review

(Continued from page 39)

blood glues involves a chemical reaction in addition to the removal of water. This is illustrated by the relatively short pressing cycles used in the manufacture of moisture-resistant plywood using these glues and the hot-press method.

The moisture added in gluing should be allowed to dry out or distribute itself thoroughly before any machining or finishing is done. This insures full joint strength, and lowers the tendency of the glued member to warp. Sunken joints and other surface irregularities are also reduced.

In laminated and similar constructions where the percentage of moisture added is relatively small, the moisture from the glue need not actually be eliminated. Sufficient time should be allowed, however, to distribute this moisture throughout the wood.

Conditioning for one week at room temperature or for two days at 120°F. will eliminate many of the surface irregularities in core stock and laminated items.

Condition Panels

It is advisable to dry out surplus moisture from cold pressed plywood by conditioning it in a panel kiln or in a chamber that can be heated to 120 F. The plywood should be placed on stickers not less than ¾-in. square, which are arranged in vertical rows, one above the other, and parallel to the direction in which the air is circulating.

If the products are to be used in heated buildings, drying and conditioning to average moisture content of 6 to 10 percent is desirable. With a panel kiln, this can be done easily in about 24 hours. Drying to excessively low moisture-content materially increases warping, opening of joints, and other defects and is to be avoided.

Proper attention to the details of preliminary surfacing, spreading, pressing, and conditioning will do much to solve the glue line problem.

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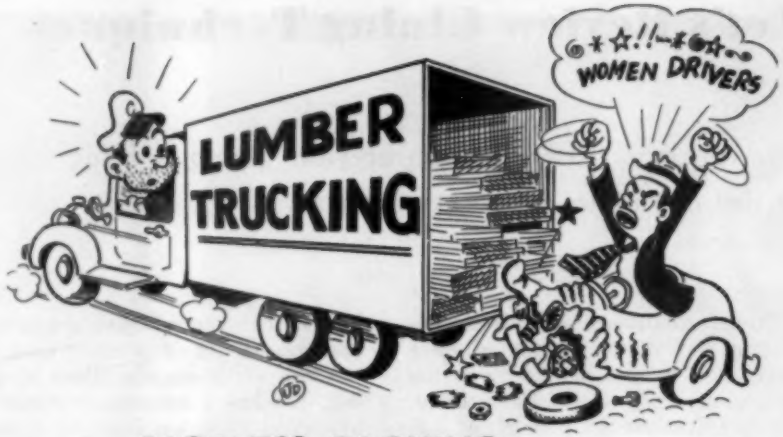


CARELESS BACKING

Why Your Drivers Have Accidents

Insurance study reveals that backing improperly is the main cause of all accidents involving lumber trucks. Here are some suggestions for eliminating these accidents.

The three major causes of accidents involving lumber trucks and other commercial vehicles used in the lumber industry are backing improperly, inattention and carelessness, and speeding.

These three factors combined to cause almost two-thirds of all vehicle mishaps in the industry, according to a study by the safety engineering department of the Kemper group of insurance companies.

The study, based on an analysis of more than 1,000 fatal, non-fatal and property damage accidents involving lumber drivers, shows the chief cause of accidents is backing the wrong way.

The apparently simple maneuver of operating in reverse actually is to blame for 26% of all the accidents, according to the safety experts.

Ranking second in the list of accident producers is inattention and carelessness. That means just plain daydreaming and it is to blame for 24% of the accidents. Speeding or driving too fast for conditions caused 14% of the accidents to rank third.

Speeding, however, was the most

(Continued on page 42)

INATTENTION

* Mr. H. F. Page, Sr., President

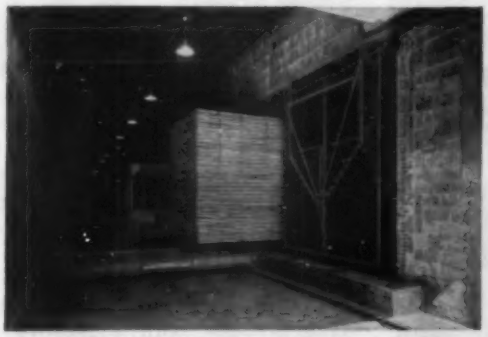
SPRAGUE & CARLETON INC.

MANUFACTURERS OF

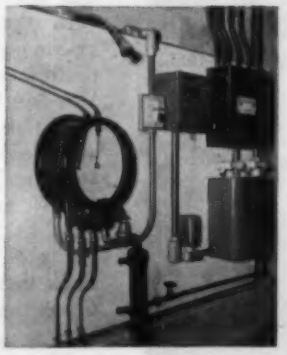
Solid Maple Furniture

** Writes:*

"We have used Standard Dry Kilns for the past four to five years with outstanding success. We are getting very good uniform drying. In making tests of the kilns, the Government Department of Forestry and the Forest Products Laboratory of the University of Wisconsin found our kilns at a maximum of efficiency. We like the kilns—they are efficient. We like Standard Dry Kiln Company to deal with. We heartily recommend their product."



Kiln loading at Sprague & Carleton is an important part of this firm's production procedure.



Accurate control equipment maintains ideal heat, humidity and ventilation conditions in the firm's Standard Dry Kilns.

This beautiful example of Sprague & Carleton's solid maple furniture illustrates why the firm's name is synonymous with quality.

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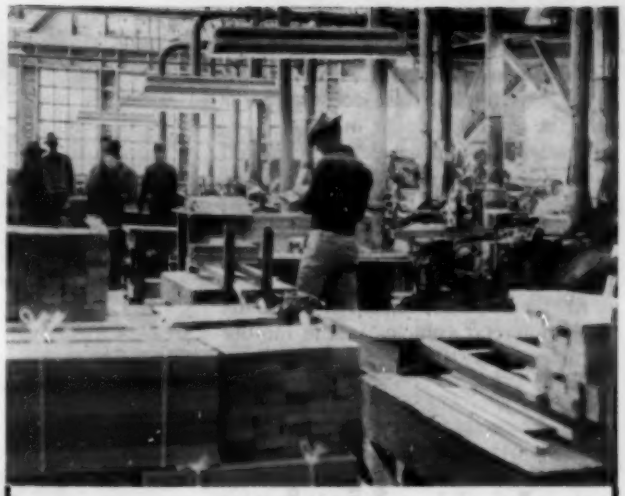

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BRADLEY LUMBER COMPANY *of Arkansas*

WARREN, ARKANSAS

expensive cause of accidents, said W. Dean Keefer, director of safety for Lumbermens Mutual Casualty Company. Driving too fast accounted for 19% of the total dollar outlay.

Inattention and carelessness ranked a close second on the expense side of the ledger costing 18% of the accident expenditure, while backing improperly ranked third with 15% of the outlay.

Keefer listed the causes of accidents to commercial vehicles in the lumber industry and their relative cost as follows:

Causes	Per Cent of Accidents	Per Cent of Cost
Backing improperly	26	15
Inattention-carelessness	24	18
Unsafe speed	14	19
Following too close	7	10
Failure to signal	6	7
Defective vehicle	5	7
Improperly parked	4	3
Violating right of way	3	6
Improper passing	3	5
Improperly loaded	3	4
Driving wrong side of center line	2	3
All other causes	3	3
TOTAL	100	100

Keefer said the most surprising results of the sturdy were the findings pertaining to improper backing.

How to Eliminate Accidents

"The most important thing to remember about backing accidents, however, is not the frequency with which they occur nor the cost, but the fact that they can be eliminated by using a little care and common sense," Keefer said.

He gave the following suggestions to eliminate backing mishaps:

1. Plan the route to avoid backing whenever possible.

2. If you must back up, make a personal check of the rear of your vehicle to find out what is behind and how much room you have.

3. Do not rely on the rear view mirror. It gives only a partial view of what is behind.

4. If you are stopped on a crosswalk by a traffic light, stay put. Pedestrians may be walking behind you.

5. Use the driveway or drive around the block rather than turning around in the middle of a street.

6. When parking, look for a space that will eliminate the necessity of backing to get out.

UNSAFE SPEEDS

PLYWOOD COMES IN HANDY NEW SIZES

West coast plywood manufacturers began volume production of Douglas fir plywood in small sizes called Handy Panels last month in a move that has important ramifications for industrial buyers and users.

Aimed at meeting more closely the specific needs of many manufacturing operations such as sign shops and industrial wood working firms, it means that plywood produced under the industry's rigid standards of quality will now be available in sizes more closely fitting their special requirements.

And it means more economical operation, trouble-free production lines and important reductions in waste in set-ups requiring panels in dimensions less than the industry's standard 4' x 8' panels.

The new stock small sizes are being manufactured in both the outdoor type plywood with waterproof glue and the interior type in accordance with the same U. S. Commercial grading standards which assure high performance in standard sizes of Douglas fir plywood.

Within each type, the small panels are offered in both the "one-side" and "two-side" grades in stock sizes 24" x 48" and smaller including such sizes as 24" x 44", 20" x 48" and 20" x 44". Although developed as a stock item, some individual manufacturers may offer other standard small sizes.

The specific grades offered in the new sizes are: EXT-DFPA A-A and EXT-DFPA Plyshield A-C (waterproof glue, two-side and one-side) and Interior A-A and Plypanel A-D (for interior use).

All grades and sizes come in a wide range of thicknesses.

The new small sizes are labeled at the mill with bright, easily read pressure-sensitive labels clearly identifying each panel for type and grade. The labels can be removed easily without sandpapering or scraping, leaving the surface free and clear for finishing.

Handy Panels are available now in stock sizes from regular sources of supply for plywood.

Industrial uses are myriad, ranging from baffle plates and chair seats to signs and toys.

Steidle

Cochrane

Northcott

Connor

Weisehegel

Hess

Holcombe

Saeman

Stump the Experts

. . . if you can! Looking for practical answers to development, production or distribution problems? Here are eight experts out of over 50 who will be on hand to talk to you at the Sixth Annual Meeting of the Forest Products Research Society at Milwaukee, Wisconsin, June 23 through 26.

No one person knows all the answers to forest products problems, but collectively, the 50 speakers scheduled for the industry-wide meeting at Milwaukee can give you a pretty clear idea of what's ahead, what's needed most in wood today.

If you are concerned with or interested in such fields of activity as —Millwork, Lumber Handling, Furniture Production or Finishing, Chemical Utilization of Wood, Various Barking equipment, Fiber Boards, Veneer and Plywood, Housing (conventional or prefabricated), or just a general overall look at forest products research, it will pay you to hear what these experts have to say next June. Here's an advance glimpse.

Prefab Housing

Harry H. Steidle, Manager of the Prefabricated Home Manufacturers' Institute, in "The Possibilities of Forest Products Research in Home Fabrication" says, "Many industrial applications for materials developed through forest products research may command higher prices but the unlimited sources of raw material, combined with the high capitalization of conversion plants, will require a mass market and there is none more ready for cultivating than the field of prefabricated housing". To bear this out Mr. Steidle points to 250,000 prefabricated homes or one out of every 25 dwellings since World War II. The prefabricators, he says, are pioneers in development, interested in new materials that will cut costs. Their operations are sufficiently flexible to permit introduction of new ideas in stressed skin panels, dry wall construction, lightweight stresses, for example. The trend is toward production of larger panels or sections with increasingly less work done at the site, says Mr. Steidle.

Tomorrow's Homes

Tomorrow's homes will not be radically different. Styling will be more functional. Modern heating plants will reduce number of basements. There will be more labor-saving devices, built-in air conditioning, automatic laundries, etc. Construction and finishes will resist "dust catchers". Finishes, for example, will be scratch resistant.

Wood Waste as Core Material

"Wood waste core materials have two types of application in the wood industry", says John D. Cochrane, Director of Research and Development of the Formica Company, Cincinnati, "(1), as a core to be incorporated within the laminate in the pressing process, and (2), as a core on which the decorative laminate is veneered by the gluing process. Both applications require special properties, such as: resistance to compression under varying pressures and temperatures; uniformity of formation which influences flatness of surface of final assembly. Internal bond strength, screw holding power; dimensional stability in varying humidity; machinability; specific gravity; and resistance to denting.

Directing a staff of 54 engineers and technicians in process engineering, testing, and research and development, Mr. Cochrane has got the answers as to how to obtain the necessary properties. In his paper he points out suggestions as to the more desirable characteristics for specific applications in decorative laminates, and indicates tests which can be applied to gauge them.

In 1947 Mr. Cochrane was awarded the John Wesley Hyatt medal for work in this field, presented by the President at the White House in 1948.

Veneer and Plywood

"In the course of testing of flues at the Vancouver Forest Products Laboratory a situation was encountered frequently in which tests of glue lines had to be repeated because the specimens broke through the wood (100% wood failure) but at loads less than the allowable minimum. Variability in results appeared to be attributive more to the wood or method of test than to the glue. The problem appeared more acute regarding gluing properties of Douglas fir veneers.

"Efforts to reduce the variability encountered in testing wood-to-wood bonds and a new method of testing glue lines are described. This new method is compared with three standard methods of test, and is found to be the most suitable of Tension Normal to the Glue Line, Tension Shear, Block Shear, and Glueline-Cleavage Tests when used to evaluate the quality of the bond between Douglas fir veneers and phenolic resin adhesives."

The author, Philip L. Northcott, who will discuss "The Development

(Continued on page 56)

FPRS Forum

This Forum covers forest products industry problems which pertain to research development, production or utilization in all fields of the industry, from logging through finishing. Specialists in these respective fields give practical answers to specific problems sent in to this Forum. These should be addressed to the FPRS Forum Editor of this magazine.

The Problem: Does weighting of kiln loads reduce warping in kiln drying of hardwoods?

Answer: By O. W. Torgeson, Engineer Forest Products Laboratory, Forest Service U. S. Department of Agriculture Madison 5, Wisconsin

It is safe to say that the annual loss of lumber due to warp is considerable and that, in some cases, it constitutes the major loss in the seasoning operation. Warping is caused mainly by the inherent shrinkage properties of the wood and cannot be avoided entirely. Some warping, however, can be prevented by taking precautionary measures.

In piling lumber, the following practices should provide proper support and protection and freedom from any external forces that might cause warping:

1. Place stickers in exact alinement over good foundation members.
2. Use close spacing between stickers, such as 16 inches.
3. Use stickers of uniform thickness.
4. Avoid big variations in board thickness in any one layer.
5. Use cover boards if protection from sun and rain is needed.
6. In drying random-length lumber, avoid unprotected and unsupported overhanging ends by sorting for length or by box piling.
7. Provide some weight on top of the pile to hold down top layers.

The results of some experimental work on weighting the top of the pile will be discussed in this article.

The possible effectiveness of measures for preventing warping can be understood best by knowing the inherent characteristics of wood that cause it.

Definition of Kinds of Warp

The several kinds of warp are defined as follows:

BOW.—Deviation flatwise from a straight line drawn from end to end of a piece of wood.

CROOK (sometimes called spring).—Deviation edgewise from a straight line drawn from end to end of a piece of wood.

CUP.—Deviation crosswise from a straight line drawn from edge to edge of a piece of wood.

TWIST.—Distortion caused by the turning or winding of the edges of a piece of wood so that the four corners of any face are no longer on the same plane.

DIAMOND.—Distortion in which a piece of wood that was originally rectangular in cross section becomes diamond-shaped.

Examples of the different kinds of warp are given in figure 1.

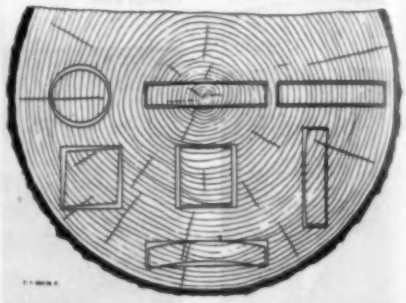

Fig. 1. Different kinds of warp.

Inherent Cause of Warp

Inherently, the warping of wood during drying is caused by the shrinkage that occurs with changes in moisture content. Shrinkage, however, is not the same in all directions of the grain. Shrinkage parallel to the annual rings (tangential shrinkage) is, for most species, nearly twice that across the rings (radial shrinkage). Shrinkage lengthwise of the fibers is very small as compared to transverse shrinkage. Because of these differences, wood with distorted or irregular grain tends to warp more than that with straight grain.

Figure 2 shows that, in a flat-sawed board, the annual rings are more tangential to the face nearest the outer portion of the tree than to the one nearest the pith. Cupping, therefore, is in the direction towards the bark, because of the greater shrinkage in the tangential direction than in the radial direction. The difference between the angle made by the annual rings with one face of a board and that made with the other face is greatest in lumber cut from small logs or from near the pith. This helps to explain why warping is usually greatest in lumber cut from small, second-growth trees.

As these inherent shrinkage differentials are the most direct cause of warping, irregular or cross-grain stock can be expected to warp considerably during seasoning. Where fibers are not parallel to the length of the board, the relatively great transverse shrinkage, acting in the longitudinal direction, is very apt to cause some bow, crook, or twist. This is why lumber from crooked logs has a tendancy to warp.

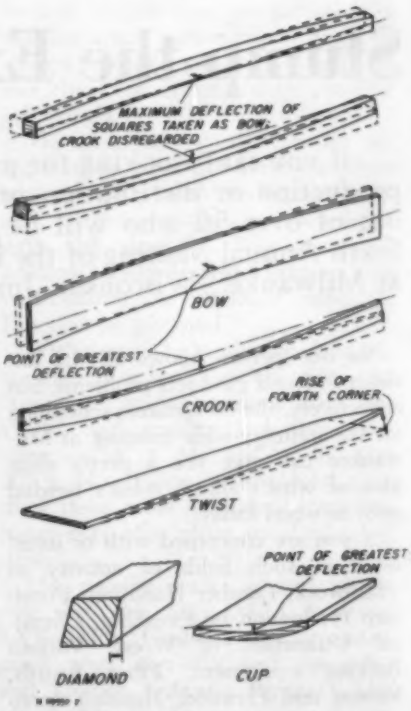

Fig. 2. Cupping in flat-sawed board.

Effect of Kiln Ddying Schedule on Warping

As a warp-control measure, the particular kiln schedule used is not of great importance. Tests have indicated that the effect of the schedule on warping is not great within the range of temperature and relative humidity conditions usually used in kiln drying hardwoods. A low temperature and low relative humidity schedule is usu-

(Continued on page 50)

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F.P.R.S. Forum

(Continued from page 43)

ally best, since, by causing a steep moisture gradient, it sets the surface in such an expanded condition that final over-all shrinkage and therefore warping are reduced. Very low initial conditions of relative humidity, however may cause surface checks and should be used only when the stock being dried will take such conditions or can be inspected closely and frequently during drying.

Reduction of Warping in a Pile of Sugar Maple

It is commonly known that a certain amount of restraint is helpful in reducing warping, especially in the top layers. Where such warping is a problem, some operators use bolted or spring clamps, while others simply place some weight on the top of the pile.

The question has often arisen as to the amount of pressure that is needed. Warp measurement of 2¼-by 3-inch sugar maple in an unweighted, commercial kiln truck, after the maple was dried to about 6¾ percent moisture content, indicated that the weight of the stock reduced bow and twist down to the fifth layer. Below that layer, no further reduction was noticeable. The amount of crook (lateral deflection) did not differ significantly from the top to the bottom of the pile.

Warp Reduction in Some Experimental Kiln Runs on Blackgum

Some experimental warp data were also collected in kiln 1- by 10-inch blackgum, 3, 6, and 12 feet in length. The test material consisted of 3 groups of 10 plain-sawed and 10 quarter-sawed boards of each length. The 3 groups were weighted, respectively, with approximately 30, 90, and 150 pounds per square foot, so as to simulate the average pile weight on the top 20 layers, on the second 20 layers, and on the bottom 20 layers of a regular kiln truck of lumber 60 layers high. These weight values correspond to those of blackgum in the final stage of drying, when the lumber weighs about 3 pounds per board foot.

The kiln-drying conditions used are given in table 1. The original moisture content of the blackgum boards was about 95 percent and the final moisture content about 7 percent.

Table 1.—Kiln schedule used in drying 1- by 10-inch blackgum boards

Temperature	Plain-sawed		Quarter-sawed	
	Relative humidity	Time	Relative humidity	Time
°F.	Percent	Hours	Percent	Hours
160	70	24	58	24
170	50	24	45	24
200	30	40	30	22
Warp measurements taken				
170	77	17	77	17
(Conditioning treatment)				
Warp measurements taken				

Effect of Weight on Unit[1] Warp

Plain-sawed boards.—The effect of increases in weight above 30 pounds per square foot was most significant with respect to cupping. On the basis of the data from these tests, the average amount of cupping in the bottom 20 layers can be expected to be about one-half of that in the top 20 layers and that of the middle 20 layers about midway between the top and bottom averages. The effect on twisting, bowing and crooking was much less significant, but the average amounts for these also indicated the same general trend in the three groups of layers.

Quarter-sawed boards.—The effect of weight on the twisting, bowing, and crooking of quarter-sawed boards was slight and somewhat inconsistent and therefore of no practical significance.

Plain-sawed boards.—The conditioning treatment had little, if any, effect on bowing, crooking, and cupping, but was somewhat effective in reducing twisting.

Quarter-sawed boards.—The conditioning treatment did not reduce bowing and crooking of quarter-sawed boards, but a slight reduction in twisting was indicated. The effect on twisting, however was less than that shown for plain-sawed stock.

Effect of Length on Unit[1] Warp

Plain-sawed boards.—Twisting per unit length was very significantly affected by the length of the board during drying, particularly after the conditioning treatment. The average twist of a 1-foot segment from the 3-foot boards was approximately twice that of a 1-foot segment from the 12-foot boards. Average bow and crook were also greatest in the shortest-length boards, but, statistically, the results were much less significant than those for twist because of greater variability. The effect on cupping was least significant, as might be expected.

Quarter-sawed boards.—The twisting and crooking of the quarter-sawed boards were significantly affected by length and were greatest in the shortest-length boards. The effect on bowing and especially on cupping was too slight to be given consideration.

[1]A board segment 1 foot long and 10 inches wide.

Warping of Plain-sawed Compared to Quarter-sawed Boards

Twisting was nearly two times greater and bowing was considerably greater in plain-sawed boards than in quarter-sawed boards, while the difference in crooking was less significant.

Importance of Proper Moisture Content and Storage Conditions

To reduce warping after seasoning, it is important to dry the lumber to a moisture content that is suitable for its use requirements. If the lumber is too wet, it will continue to warp upon any further drying. If too dry, it will not only have warped more than necessary during the drying process, but will very likely change shape during any subsequent moisture regain. Improper storage conditions for the dried lumber or fabricated articles may nullify, to some extent the care taken in drying.

[1]A board segment 1 foot long and 10 inches wide.

Wood

You believe it?

It is estimated that 672,000 public school classrooms must be added between now and 1958 to meet growing elementary and secondary demands.

?

In an average year, fibers manufactured from wood by pulp and paper mills in the South equal 24 million bales of cotton.

?

The Spring crop of baby forest trees at the Nisqually, Washington, Tree Nursery of private forest land owners will bring the total of trees produced to date to 46 million.

?

Two-thirds of our redwoods still grow in virgin forests.

?

Canada imports a great many hardwoods from the United States but only a few softwoods, including cypress, Port Orford Cedar, Red Juniper, and Redwood.

UNIVERSITY OF MICHIGAN LIBRARIES

(Continued from page 14)

which includes pulpwood-size trees as well as sawlog size trees, the increase has been seventeen percent.

PAPER and BOARD

Increased Production

The over all production of paper and board in 1951 was 26,100,000 tons, an increase of 7 per cent over the 24,300,000 tons of 1950. The American pulp and paper industry plans to increase its annual capacity by more than 2 million tons in 1952. The breakdown of these production increases are Paper capacity, 532,890 tons a year; Paperboard, 662,780 tons and woodpulp 1,016,647 tons. With only 6 per cent of the population, the United States now consumes 68 per cent of the world's production of paper and paperboard. It produces 58 per cent of the world production.

MISCELLANEOUS

More Newsprint Plants

Approval for the construction of three new newsprint mills costing more than 71 million dollars has been approved by the Defense Production Administration. The new plants are expected to add 256,000 tons of newsprint annually to U.S. production. 1951 U. S. production of newsprint was 1,096,000 tons. Imports of newsprint in the U. S. for 1951 was 4,960,550 tons. In approving the construction of the new mills DPA issued the builders "certificates of necessity" enabling them to write off much of the cost in tax benefits. The certificates were issued to The Bowater Southern Paper Corporation for a $51,000,000 plant at Charleston, Tennessee; Southerland Paper Mills, Inc., for a $15,040,000 plant near Lufkin, Texas; The West Tacoma Newsprint Company for a $5',000,000 plant at Steilacoom, Washington.

Users of HF Heating Equipment

This is an important message to all users of High Frequency heating equipment particularly those whose equipment was manufactured prior to June 15, 1947. The provisions of the FCC Rules and Regulations, Part 18, relating to radiation and communication interference from industrial induction and dielectric heating equipment. In essence the rules require certification, on or before June 30, 1952, of compliance with certain minimum radiation requirements for all equipment manufactured prior to July 1, 1947. A period of five years was allowed by the Commission for users of uncertified equipment to properly check and obtain certification of their equipment. If your equipment is not certified contact the manufacturer of the equipment immediately for guidance in complying with the rules. A complete copy of the FCC Part 18, Rules and Regulations Relating to Industrial Scientific and Medical Service, may be obtained from the United States Government Printing Office, Washington, D. C.

Freight Car Loadings

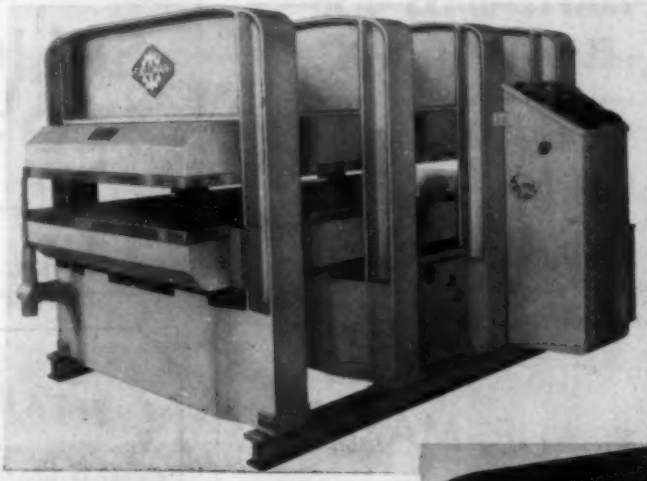
Forest Products Freight Car Loadings for the last five years:

1951	2,363,577 Carloads
1950	2,225,803 Carloads
1949	1,952,186 Carloads
1948	2,348,139 Carloads
1947	2,414,548 Carloads

1951 loadings show a 6.2 per cent in-

(Continued on page 55)

Here's the One



THEY'RE ALL TALKING ABOUT

IDEAL FOR THE SMALL SHOP . . . PRODUCTION-GEARED FOR INDUSTRY

T. D. Perry discussed this type plywood hot press in the February issue of *Wood & Wood Products*. Shortest bonding cycles—economy of floor space—lower man-hour handling cost—saves in process inventory—eliminates high-priced installation by light floor loading—turns out high finish, superior even-bond plywood at costs so low it will amaze you.

Upper left: Single opening, end loading. No special footing or pit required.

At right above: Multiple opening, side loading. Available up to 20 openings.

Fjellman presses are steel box-frame construction for greatest rigidity. Platens are Swedish firebox steel, polished and ground for fine product finish. Parallel guides insure accurate closing alignment under pressure up to 2000 PSI. Immediate delivery on most models.

Fjellman & Winther Company

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PENOKEE
VENEER COMPANY

MANUFACTURERS OF
ROTARY, SLICED AND HALF-ROUND

VENEERS

IN
BIRCH—MAPLE—BASS—ASH—OAK—ELM—WHITE PINE

GENERAL OFFICES
MELLEN, WISCONSIN
P. O. BOX 110
TELETYPE, MELLEN 29—PHONES 205 - 3313

Penwood
PLYWOODS
Hardwood Plywoods for Quality Trade

THE ARISTOCRATS IN

BIRCH—MAPLE—RED OAK—WHITE OAK—ASH—BASSWOOD—ELM—WALNUT—MAHOGANY

PLYWOODS

SPLICEDWOOD CORPORATION
MELLEN, WISCONSIN
P. O. BOX 110
TELETYPE, MELLEN 29—PHONES 205 - 3313

TRADE MARKED
GRADE MARKED

Southern Lumber

PINE
OAK
POPLAR
GUM
and other Hardwoods

USE OUR MIXED CAR SERVICE

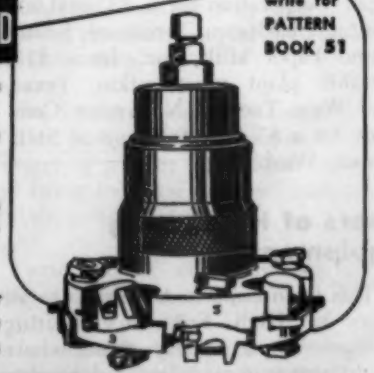
W. T. SMITH LUMBER CO.
CHAPMAN ALABAMA
40 YEARS OF MANUFACTURING YELLOW PINE AND HARDWOODS

IT TAKES ONLY ONE SET OF SHIMER HEADS for

Flooring
Wainscoting
Siding
Ceiling

SHIMER
MATCHER HEAD

write for PATTERN BOOK 51



- **SELF CENTERING** avoids set-screw failure . . . centers head for perfect cut and true balance!
- **QUICK CHANGES** from thick-to-thin cuts or pattern-to-pattern!
- **CIRCULAR BITS** outwear conventional straight type, are easy, quick to sharpen!

Manufacturers Of The Shimer Cutter Heads
SAMUEL J. SHIMER & SONS, Inc.
MILTON, PENNA.

Trends

(Continued from page 53)

crease over 1950 and a 21.1 per cent increase over 1949.

Douglas Fir Production—1951

All production records for the Douglas Fir region were broken in 1951 with a production of 11,198,459,000 b.f. In 1950 production was 10,663,898,000 b.f. while in 1949 it was 9,870,432,000 b.f. Previous high years were 1926 with 10,285 billion b.f. and 1929 with 10,290 billion b.f.

Markets

Softwood lumber . . . orders and shipments topping production . . . increased prices reflect these conditions.

Hardwood lumber—markets becoming firmer, sales off in comparison to last year's scare buying prices strengthening—outlook good.

Douglas Fir Plywood—supply and demand increasing—demand greater than production now. Second round of increases on prices now going into effect since November.

Veneer—Output and shipments in January best since last August—Inventories down slightly.

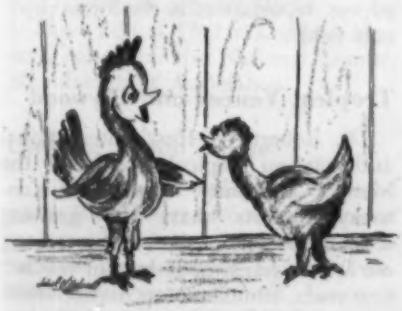
Furniture—Retailers inventories approaching normal—manufacturers buying lumber and supplies cautiously New orders for next few months will be below '51. Prices softer for next few months.

Home Building—easing of curbs indicate at least another million starts in 1952.

Radio & Television—Industry leaders believe '52 will be the best radio and television year yet.

Summary—From every standpoint Forest Products Markets look very bright at this time.

WOODICTIONARY



Barn Boss

The man in charge of the stables in a logging camp.

Did You Know

?

Western red cedar, whose technical name is Thuja plicata, belongs to the same botanical family as the Cedars-of-Lebanon used for Solomon's Temple in biblical times.

?

Dunnage is defined as wood used for the protection of shipments during transit, including shoring, blocking, stripping, etc.

Forest fires, in an average year in the United States, destroy enough trees to produce a year's newsprint supply for every daily newspaper published in this nation.

?

Timber beams and trusses can save 75 percent to 80 percent of the critical steel used in heavy buildings.

?

The value of products of sawmills and planing mills produced in the United States increased from 697 million dollars in 1939 to two billion five hundred one million dollars in 1947.

Mereen-Johnson Resaws have special features that make for production economies and low maintenance costs. Eight feed rolls hold the stock rigid and eliminate "stock wobble". Variable feed drive—tilts for bevel siding. V-belt drive, 1200 RPM motor.

For full description and specifications, send for Bulletin No. 210B

Mereen-Johnson MACHINE COMPANY

4401 LYNDALE AVENUE NORTH • MINNEAPOLIS 12, MINNESOTA

Stump Experts

(Continued from page 47)

of the Glueline-Cleavage Test", is well-known in Pacific Northwest forestry. He is in charge of the Plywood unit of the Vancouver Forest Products Laboratory of the Department of Resources and Development, Canada. A registered forester, he has served private industry, has been in the consulting forestry business, and is an active leader in the Association of Professional Engineers, and Institute of Forestry.

Packaging and Handling of Lumber

Richard M. Connor, President and Resident Manager of the Conner Lumber and Land Co., Laona, Wisconsin will discuss "Packaging and Handling of Lumber, Dimension and Hardwood Flooring at a Hardwood Sawmill Furniture Factory and Flooring Plant", at the FPRS Meeting in Milwaukee, June 23.

"It is fairly safe to use the rule that where the installation of a labor-saving device is within the pocketbook of the operator, and will effect savings which will equal or exceed the cost of the equipment over a reasonable period of time, one should give serious consideration to its installation in view of keeping costs in line during periods of increasing labor and material prices." Improvements in the northern hardwood area have come principally since 1940 as a result of advancing labor rates. The Connor Company experienced additional obstacles in the variable climatic conditions, low ground on which their plants are located, and large number of species handled at one time in their sawmills.

Laminated Lumber

"Laminated Lumber from Low-Grade Hardwoods by the continous Glue Press Process," by E. G. Wiesehuegel, Chief of the Forestry Relations Branch, Tennessee Valley Authority, Norris, Tenn., "summarizes TVA's efforts to develop and test a method of converting low grade hardwood lumber. It covers one phase of a program designed to stimulate forest development by creating a profitable market for low-value trees and logs."

"During the period 1940-1947, TVA carried out the project to (1) determine whether low-grade hardwoods, removed from the forest as stand-improvement cuttings, could be handled at a cost to make its use in laminated lumber economically attractive; (2) to develop machines and methods for conversion; (3) to conduct tests of the products for various uses; (4) analyze production yields, rates and costs; market volumes and values; and appraise overall feasibility; (5) explore methods for getting the project results into commercial use by the hardwood industry.

Mr. Wiesehuegel supervises the research in forest utilization, management, influences economics and tree improvement for TVA. He is a senior member of S.A.F., past president of the Ohio Forestry Association, member of A.F.A. He has published over 30 papers, reports, etc. in the forest products field.

Tropical Veneer and Plywood

Dr. Robert W. Hess, international authority on tropical woods, of the Mengel Company, Louisville, Kentucky, reports that "the growing scarcity of high quality timber among our better hardwoods has, in the last few years, stimulated an unprecedented importation of tropical woods into this country. During the past year more than 100 species of tropical

For JOHN WIDDICOMB'S

Masterpieces of Fine Furniture

National Casein

Provides the Right Glue for the Job

Infinite attention to detail has won for John Widdicomb an enviable reputation as designers and manufacturers of fine furniture . . . *for nearly 100 years.*

In the John Widdicomb furniture masterpieces, NATIONAL CASEIN'S glues play an important part. Two NATIONAL CASEIN glue formulas have ten (10) specific uses in this exquisite sideboard.

You, too, can count on NATIONAL CASEIN for the right glue for your glue job. Your inquiry incurs no obligation.

For core stock in base tops, upper end panels, shelves and upper top, John Widdicomb Co. uses National Casein Liquid Resin glue with Catalyst SPL.

In veneer gluing on upper end panels, lower door panels, upper deck back panels, lower end panels, base tops and deck tops. National Casein Liquid Resin glue with Catalyst B is used.

Try us once . . . You'll stick with us because we stick for you.

National Casein

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woods were imported into the United States. The majority were intended for the manufacture of veneers and plywood, either on a production or a trial basis. On the basis of past performance, it is safe to predict that few of these will get beyond the trial stage and only a very small percentage will reach volume production. In a previous paper presented before the FPRS the problems connected with the harvesting of tropical timber were discussed and some solutions suggested. Here we will examine the woods with reference to their use for veneer and plywood."

Dr. Hess formerly was associated with Yale School of Forestry where he supervised research work in tropical woods. He has written numerous articles on utilization, anatomy of wood, etc. He is editor of "Tropical Woods", and co-author of the book, "Timbers of the New World."

Furniture Finishing

Results of a research project at the Timber Engineering Company on the "Surface Checking of Veneered Furniture Panels" will be discussed at the forthcoming FPRS National Meeting in Milwaukee, Wis., June 23-26, by Robert A. Holcombe, a chemist of the Timber Engineering Company, Washington, D. C. Mr. Holcombe reports that, "results of these studies indicate that alternate conditions of high and low humidity are responsible for fatigue of the finished film in specific areas of oak and walnut panels, while cherry and maple veneered panels remained unaffected. The use of a high grade synthetic varnish finish controlled panel checking significantly as compared to lacquers or low grade varnishes. Panels prepared with the loose side of the face veneer exposed had a greater tendency to develop surface checks than panels prepared with the tight face exposed."

Mr. Holcombe conducts research in wood, wood products, finishes and mechanics for TECO. He is the author of six published articles, his most recent contribution being "Insurance for a Three-Billion Dollar Lumber Market", issued by the National Lumber Manufacturer's Association.

Uses for Wood Waste

"The chemical utilization of wood waste is a subject of constant interest to forest products processors. It represents an enormous supply of organic raw material, and hence a potential source of wealth. Its utilization would be of much value in improved forest management," reports Dr. Jerome F. Saeman, Chemist with the U. S. Forest Products Laboratory, Madison, Wisconsin in his paper, "Status of Research in the Chemical Utilization of Wood Waste", to be presented on Monday, June 23, at the FPRS meeting in Milwaukee.

The amount of wood waste available and its geographical distribution is discussed by Dr. Saeman. Methods are considered for its utilization and are dependent on the amount available and its location in relation to the potential market outlets. Proposals made previously for the utilization of wood waste are reviewed and current work at the Forest Products Laboratory and other laboratories is discussed.

In the Derived Products Division of the U. S. Forest Products Laboratory, Dr. Saeman is doing fundamental research in wood and cellulose chemistry. He has published various technical articles in his field. He is a member of A.C.S. and of FPRS.

The eight papers described have given you an insight into the content and discussion which will be raised at the FPRS meeting in June.

NORTH COAST **"DIRECT-FLO"** DRY KILNS

REVERSIBLE CIRCULATION • UNIFORM DRYING

NEW KILNS

KILN MODERNIZATION • KILN ACCESSORIES

BEYOND A DOUBT, THE NORTH COAST DRY KILN IS THE MOST EFFICIENT KILN IN OPERATION TODAY. The Fans are positioned at the sides of the lumber loads so that the air follows the shortest possible "DIRECT-FLOW" path. This insures uniform efficient drying with lowest possible power consumption. The Lovsted Company is a big part of the Dry Kiln building industry and one that serves well, competitively and honestly and will at any time be glad to discuss your requirements and if given the opportunity to serve you with dispatch and satisfaction.

Write our Dept. WK-3 for our Dry Kiln Catalog 366.

OFFICES AND WAREHOUSES IN
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ENGINEERS AND MANUFACTURERS
4000 W. MARGINAL WAY - SEATTLE 6, WASH.
PHONE AValon 4000

NAMES . . . EVENTS

(Continued on page 20)

Expansions

NATIONAL STARCH PRODUCTS, INC., New York City announces the launching of a $2,000,000 resin expansion program.

REICHHOLD CHEMICALS', INC., announces the receipt of a necessity certificate providing $1,475,000 for expansion of their phenol producing plant in Kenner, La.

THE ROHM & HAAS COMPANY, Philadelphia, announced the opening of new office and warehouse facilities in Charlotte, North Carolina.

THE GENERAL BOX CO. announces the opening of its new executive offices and laboratory in Des Plaines, Ill.

Associations

NPDA SPRING MEETINGS will be as follows: Midwest—Edgewater Beach Hotel, Chicago, Ill., March 14; Northeast, Warwick Hotel, Philadelphia, Pa., March 21; Southern, Roosevelt Hotel, New Orleans, La., March 31; and West Coast, Hotel Multnomah, Portland, Oreg., April 7. The program will consist of (1) Sales Training for Wholesale Salesmen (2) Plywood and Related Markets As They Look To You (3) Selling Defense Contractors (4) General Ceiling Price Regulation SR 87-Ceiling Prices For Resellers of Lumber and Allied Products (5) Survey of Slow Moving Items

Results of the election of officers for the NATIONAL WOODEN BOX ASSOCIATION, Washington, D. C., are as follows: D. A. MCNEILL, JR., McNeill, Lauff & McNeill, Thompson, Ga., new Association president; R. F. MILES, Rathborne, Hair & Ridgway Box Co., Chicago, First Vice President; MORRIS MILBANK, Rogue River Box Co., Grants Pass, Ore., Second Vice President; LESLIE J. CHAFFEE, Chaffee Bros. Co., Oxford, Mass., Third Vice President. Reelected were Executive Vice President C. D. Hudson, Washington, D. C., and Treasurer P. John Galbraith, Philadelphia, Pa.

AMERICAN WOOD-PRESERVERS' ASSOCIATION, Washington, D. C., will hold their Forty-eighth Annual Meeting April 21-22-23-24 at the Hotel New Yorker, New York City.

VICTOR H. CLAUSEN has been appointed to the Research and Technical Div. of the CALIFORNIA REDWOOD ASSOCIATION. His headquarters will be at the Association's Eureka office.

NORTHERN HEMLOCK AND HARDWOOD MANUFACTURERS ASSOCIATION elected the following officers at their Annual Meeting, February 14: President—ROBERT W. LYONS, Wm. Bonifas Lbr. Co., Neenah, Wis.; Vice President—C. D. ZAGELMEIER, Michigan Pole & Tie Co., Newberry, Mich.; Treasurer—W. W. GAMBLE, JR., White Lake, Wis.

THE SOCIETY OF INDUSTRIAL PACKAGING & MATERIAL HANDLING ENGINEERS will hold their 7th Annual Exposition at the Chicago Coliseum, Chicago, Ill., on Oct. 14-15-16.

CHESTER B. STEM, New Albany, Ind., was elected Chairman of the Committee on Hardwood Research Administration at the annual meeting at Edgewater Park, Miss., on Feb. 12; D. S. DEWITT of Holt Hardwood Co., Oconto, Wis., was elected Vice-chairman.

New officers and directors of the HARDWOOD DIMENSION MANUFACTURERS ASSOCIATION elected at their 22nd Annual Meeting are: Pres.—HAROLD C. MOSER, Gamble Bros., Louisville, Ky.; Vice Pres.—GEORGE ROZELLE, E. A. Stewart Lbr. Co., Texarkana, Tex.; reelected Sec.-Treas.

For big jobs and little jobs, know and insist upon the lustrous beauty of wood products finished to perfection . . . with Jewel *Natural* Garnet abrasive belts.

Toughened and "tempered" by a special, patented process, Jewel natural Garnet cutting edges are made to last longer . . . to cut cleaner, faster . . . to "fill" less quickly. Exclusive "Velvet Joints", featured on *all* Jewel Brand Belts, eliminate bumpy, uneven belt travel, assure satin-smooth finishes and better overall performance. Most important of all, Jewel natural Garnet abrasives help you make worthwhile production savings right from the start, do as good a job and better than many of the more expensive synthetic grits.

Write us direct or ask your jobber for up-to-the-minute information on the complete line of Jewel Garnet Belts for both portable and large stationary belt sanders. Abrasive Products, Inc., 553 Pearl Street, South Braintree 85, Mass.

SHARPER, TOUGHER

Jewel Brand COATED Abrasives

CUT COSTS!

—PHILLIPS HAYWOOD; Directors—OMAR HILTON, Bradley Lumber Co., Warren Ark., STANLEY SHEIPS, Wood Cellulose Prods. Co., Chattahoochee, Fla., ROBERT K. MORGAN, Morgan Mfg. Co., Black Mountain, N. C., GEORGE STAPLETON, King Lumber Industries, Canton, Miss., CARLTON SMITH, Carlton Smith Industries, Inc., Memphis, Tenn.

EBERLY THOMPSON, vice president, M and M Wood Working Co., Portland, Ore., was appointed chairman of the Conservation of Renewable Natural Resources Committee of the NATIONAL ASSOCIATION OF MANUFACTURERS, New York City.

JOSEPH A. SOWELL of the T. R. Miller Mill Co., Brewton, Ala., was

Joseph A. Sowell

elected president of the Wirebound Box Mfrs. Association.

Miscellaneous

DR. E. S. HARRAR, wood technologist of Duke University is spending his 6-month sabbatical leave conducting studies on hardwood veneer log grades in the Southeast Forest Experiment Sta., U. S. Forest Service.

THE 35TH SHORT COURSE IN DRY KILN PRACTICE will be given at the College of Forestry from Monday, April 21, through Sat., April 26, at Syracuse, N. Y.

THE BINKS MFG. CO., Chicago, Ill., announces the schedules, through June, for its spray painting school, new classes being held Monday through Friday, as follows: April 2 to 6, May 7 to 11, June 4 to 8, inclusive. The illustration shows a class of the Binks School taking a spray gun apart and putting it back into operating order. Thus by examining the insides of a gun, each man more thoroughly

EVERY STUDENT takes a spray gun apart, then puts it back in operating order.

understands the why and wherefore of good spray painting practices.

Friends and associates of GEORGE W. PEAVY, who died June 24, 1951, are initiating a drive for a Peavy Memorial Fund to be used to establish a student loan fund at Oregon State College for the benefit of undergraduate forestry students. Mr. Peavy was former dean of the School of Forestry and past President of Oregon State College.

Deaths

PHILIP DALE DEAN, president of THE DEAN COMPANY, died in Norfolk at the age of 48, February 20.

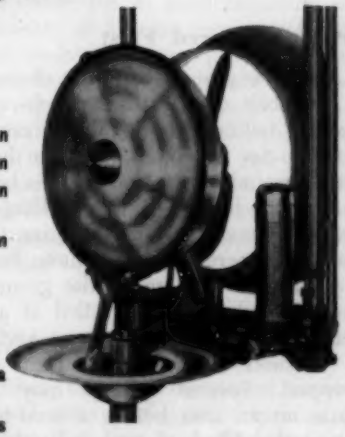
ONE MEASURE OF A GOOD PRODUCT—

Who Uses It?

—A ROUND DOZEN, FROM THE HUNDREDS OF LEADING FIRMS NOW USING

Bahnson HUMIDIFIERS

American Plywood Corp., New London, Wisconsin
Baldwin Plywood & Veneer Co., Gillett, Wisconsin
The Connor Lumber & Land Co., Laona, Wisconsin
F. Eggers Plywood & Veneer Company, Two Rivers, Wisconsin
Extensole Corporation, Sparta, Michigan
Indiana Desk Company, Inc., Jasper, Indiana
Jolin Plywood Corporation, Shawano, Wisconsin
The Karges Furniture Company, Inc., Evansville, Indiana
Poinsett Lumber and Manufacturing Company, Trumann, Arkansas
Rock Island Millwork Company, Rock Island, Illinois
Splicedwood Corporation, Ashland, Wisconsin
Story & Clark Piano Co., Grand Haven, Michigan



BAHNSON TYPE L CENTRIFUGAL HUMIDIFIER WITH AUTOMATIC CONTROL

You'll join this list of satisfied customers if you check the facts—and learn how moisture content control can save you many dollars, many hours, and many headaches.

Moisture content control, through automatic humidity control, means less warping, shrinking and checking—makes veneers behave.

If you are not sure WHY, WHERE and HOW to control humidity, send for our booklet, "HUMIDITY CONTROL IN THE WOODWORKING INDUSTRY."

Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

Saving Timber

(Continued from page 31)

tree setting. Uphill timber falling is an integral phase of progressive logging.

The first harvest in progressive logging is prelogging, carried on with light, portable equipment, such as mobile yarding towers. Prelogging removes the understory of small diameter hemlock and cedar which normally is damaged or destroyed in the big log harvest. With a yield of from 5 to 30 cords an acre of pulpgrade logs, prelogging is done before the spar tree is rigged. Yarding distances range from 400 to 700 feet on each side of the logging road.

After the conventional spar tree has been cable-rigged, and before any of the big standing timber is felled, a clean-up harvest is made of large windfalls with merchantable volumes. Logging crews may move along a road for several spar-tree settings, yarding out only the down stuff at each landing and leaving the block-hung spar trees standing for the succeeding phases of the big log harvest, which follow within a short time.

Ground Cleared First

After the ground has been cleaned of the big down stuff, which can shatter falling trees, falling crews move in for the more extensive harvest of sound, green timber. It is here that uphill falling or tree pulling is put to a greater use in salvaging the maximum merchantable volume from each tree as it drops to the ground. Only enough timber is felled at any one time to permit maximum saving of volumes before more trees are dropped. Several fellings may be made on an area before a seed-tree surrounded block of timber has been clear-cut.

"Tree pulling is a way of buying time," says John Wahl, Weyerhaeuser's logging manager at Tacoma. "The forest industry has several million acres of young stuff, less than 50 years old, coming along in good shape to supply mills of the future. If we can give this new forest an extra five to seven years of growth by making our mature timber last longer, we'll be just that much ahead. Uphill falling is a practical way of stretching old-growth timber supplies. It means we can log fewer acres to meet our present mill requirements."

Foresters back up that statement with dramatic statistics. They know the average annual growth of second-growth Douglas fir forests is about 500 board feet an acre. If in falling an old-growth tree, it is possible to save from shattering the equivalent of one log 32 feet long and 48 inches in diameter, foresters have gained 3,000 board feet, or six years of growth on an acre of young forest. Multiply that bonus by many more trees an acre and by the number of acres logged annually. The volume of savings, expressed in acres of growing forest, is both impressive and realistic. That's why loggers and foresters are enthusiastic about this help-yourself-to-more-wood revolution in logging methods.

Leaners Saved

Few old-growth trees on 45 to 60 per cent sloped hillsides grow truly vertical. There is a high percentage of "leaners," usually downhill or off to one side. In normal falling, such trees generally must be undercut in the direction of lean. When a 200-ton giant fir swishes through the downhill falling arc thus dictated by Nature, one or more logs are usually split or shattered and must be bucked out for "chunk" logging. This breakage is aggravated where a tall tree is dropped across a canyon, in which case almost all the trunk may be lost.

In uphill falling a five man crew is used, plus cable rigging and a tractor equipped with a double drum winch. A bulldozer blade on the tractor is convenient, but not necessary. The crew consists of one set of fallers, a rigging man, a high climber and a tractor engineer. A set of buckers sometimes is used on the same team. Because all tree falling is done from the top of the hill downward, an access road or roads must be built at the top of the slope for the tractor, which exerts its cable pull from the uphill side.

Simple Operation

The falling operation is comparatively simple. After the prelogging and windfall harvests have been made, a tractor is run in on the specially constructed access road at the top of the hill and positioned, double-drum end pointing in the direction of the first tree to be pulled. Special anchorage is not needed, because the cable pull exerted is not great. The tractor must be far enough away from the tree which is to be felled uphill, so that the machine will be well back of the path of the tree's fall toward it, usually a distance from 200 to 500 feet.

A ⅝ inch cable from the double drum winch is then run downhill to the tree and carried aloft by a high climber, who fastens it from 60 to 80 feet above ground level by single-looping the cable around the trunk, the cable end being "choker"-hooked to the line. After the high climber descends, the tractor engineer takes up slack on the powered drum winch to tauten the cable. The fallers now make a normal undercut and backcut with their power saw, an operation requiring about ten minutes. The undercut, however, is made on the uphill side, regardless of the fact that the tree may be leaning downhill. The slanting undercut governs the tree's direction of fall.

When the backcut has been put in far enough for the tree to approach falling readiness, the tractor engineer is signalled with the conventional horn, hand or whistle system. He carefully takes up more tension on the cable, while the fallers give their new "timber up the hill" chant, put in the last bite on the backcut, and get back out of the way. As the tree starts to go over slowly, the cable is tautened and helps pull the tree uphill. Once the tree attains "full flight," the cable tension is released and the wire rope is allowed to fall free, to be unfastened for reuse on the next tree.

Many Trees Pulled

With slight shifts in position the tractor can pull several trees from its first station, working around in an arc as determined by topography. Pulling distances may extend from 700 to 800 feet from the tractor. The machine is then moved to another position on the access road and a new group of trees is pulled uphill.

The falling crew works progressively downhill, dropping selected timber uphill into a felled timber area as they go down the slope. Because uphill falling is a part of progressive logging, the falling crew may go over the area several times, from top to bottom, on a modified selection basis. Trees felled may be yarded out before another area-wide felling is made. The number of area-wide fallings necessary is determined by the amount of timber that can be saved each time. The clear-cut hillside presents a distinctly radical appearance in felled timber. Tree trunks are not crisscrossed, but point uphill in a neat and almost parallel formation. There are no buckers' "jackpots" caused by trees felled in all directions, as is normally the case.

According to safety engineer Paul Leroy at Vail, the safety record for this new method of timber falling has

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been very good, even though the hazard of exposure has been increased an estimated 40 per cent. The men work as a closely-knit team. With an adequate system of signals, there has been no particular problem in accidents. Practical men are needed in such an operation, and only individuals of good judgment are used.

Logging superintendent Reichel estimates that the tree pulling technique is applicable on about 15 per cent of the Vail logging area. This percentage is about the same on the St. Helens (Longview) and Calapooya (Springfield) tree farms. At Vail, from one to two crews work regularly on uphill tree falling. An average day's output of the uphill logging team overruns the scale of a normal set of fallers. The method obviously is not needed on level or gently rolling ground. Biggest pay-off is in rough, canyon-studded terrain, where in normal falling almost all the tree may be lost through shattering.

It costs more money to log this way, say Weyerhaeuser logging superintendents, but the added cost is repaid in the market value of the timber saved. Several sample plots checked by Weyerhaeuser's cruising department bear this out.

One six acre tract on a steep hillside came out with an overrun of 15 per cent as a result of uphill logging. On a second 12 acre plot—on much rougher ground—about a 20 per cent overrun in timber cut was effected by uphill falling. On some trees the falling technique saved about 225 lineal feet of logs, or all the tree. This new timber-hoarding method of logging saves about one section of timber for every six logged.

Other Benefits Also

There are many other benefits, say the logging superintendents and foresters. Progressive logging and uphill falling reduce slash hazard and also lower fire protection costs—big items in present day tree farming. Slash fires required by state law aren't as hot, because they have less fuel to consume. This maintains better site conditions for natural reseeding and subsequent growth of trees. There is also strong public support for this type of timber harvesting, because it conserves the Northwest's supply of premium grade logs.

Wahl sums up the advantages of uphill falling in one sentence. "Sure, the forest industry has a good backlog of old-growth stands, but why waste it by dropping it in canyons!"

Special crews doing uphill logging are proud of their pioneering technique and can bear out Wahl's statement by field records of whole trees saved by uphill falling—with occasional big-tree volumes running as high as 20,000 board feet. There are many examples of a normal three-log tree being made a six-log tree by uphill falling—and that's a real payoff in old-growth timber. Weyerhaeuser's Vail, Springfield and Longview branch operations are trying out something new which has industry-wide possibilities wherever there is an interest in conservation and in stretching supplies of mature timber. Federal agencies have become interested in the technique and are studying it for application in their timber sale programs. On areas where uphill logging can be used, it has been proved a real board-foot saver of costly old-growth timber.

Saw Maintenance

(Continued from page 35)

edges and gauges. Filing is usually confined to injured teeth or teeth that do not come up. The automatic sharpener used for sharpening gang saws feeds either in the swage or in the gullet with a knife-shaped finger and the feeding mechanism is adjustable to the length of stroke required. The feeding pressure through the feeding stroke is controlled by an automatic brake control.

Chain Saws

The power chain saw has brought new problems to the tool maintenance department which require the use of new equipment. These saws were first fitted by hand filing, a process which requires considerable skill as it is difficult to maintain angles required of the various teeth and rakers and the different tooth levels.

In hand filing the chain is pulled over a short section of track clamped in a vise to hold it as the teeth are filed. A jointing bracket or gauge is used to check tooth height, consisting of a metal block long enough to extend over one sequence of teeth with raised sections provided for the riders or rakers. Jointing for rider clearance is seldom required unless the chain has been damaged. This clearance is checked with a short straight edge while the chain is on the bar. The set of the cutter teeth is checked with a set gauge and setting of these teeth is done with a hand spring set, of the plunger and anvil type, as the hammer and anvil usually results in broken teeth.

Following the early use of small emery grinders, a number of chain saw grinders have been developed especially for sharpening chain saws. These grinders are adjustable to angles required by each type of tooth and the teeth are held in position by a track through which the chain is pulled. An index finger adjustment permits proper location of the face of the teeth to the outside face of the grinding wheel and indexing from the back of the teeth.

Some grinders carry vertical protractor scales for setting the hook angle of the chain teeth and horizontal protractor scales for setting the bevel angle of the teeth. The operating mechanics are relatively simple. After setting the grinding wheel to the right angle and adjusting the plunger operating lever that feeds the teeth into the grinding wheel properly, it is just a matter of moving the chain to a stop, locating on the back of the tooth and grinding.

It is necessary to keep a good supply of replacement teeth, screws, bolt and rivets on hand and spare chains should be on hand to prevent down time. Small grinders are used to keep the cutter bar in good condition and a variety of files are required for general maintenance purposes. A sharp putty knife comes in handy for cleaning out the track if no tool is supplied with the saw. Standard riveting equipment or a suitable anvil and peening hammer aid in making chain repairs and brushes and/or a portable blower may be needed to clean the chain saw fan and intake screens periodically.

Carbide Tipped Saws

Since the introduction of carbide tipped saws to the woodworking industry, they have been the saw fitter's problem child. They do not require jointing or setting but accuracy of grinding is important, not only for clearance on sides and top, but for alignment, to make certain each tooth cuts equally. Due to the hard, brittle nature of the tips and the fact they are brazed into place, carbide tipped saws require very careful handling and special equipment is required for their maintenance.

While the method of grinding is about the same as that used with standard steel saws, a rigid precision grinder must be used to insure accurate grinding. Any spring in the grinder will cause the wheel to back away as it travels over the carbide tip and a round surface will be formed on

(Continued on page 62)

Saw Maintenance

(Continued from page 62)

the face of the tooth instead of the flat surface required for good cutting. Where the saw is manually fed to the grinding wheel, a dial indicator is often used to make sure each tooth is ground to the same measurement. On the machine tool precision grinders and grinders that have been designed especially for grinding carbide tipped saws, an index feed device is provided for grinding accuracy.

When carbide tipped saws have reached a condition where rough grinding is required, many plants prefer to return the saw to the saw maker for reconditioning. A silicon carbide wheel of 80-grit grain size is generally used for this rough grinding operation. Finish grinding is always done with a resinoid bonded diamond wheel, from 150 to 320 grit, and the 200-grit wheel seems to be most used. Finish lapping is usually done with a small wheel impregnated with fine diamond dust. These saws may be lapped a number of times before a thorough regrinding is necessary. The kind of wheel generally used is either a face or dish type wheel.

There are a number of specialty type saws that have not been touched on specifically by name but most, if not all, of them can be fitted with the methods and equipment described in accordance to the tooth type or combination tooth-types they carry. In a like manner some pieces of special saw fitting equipment have been passed over as they embody the features of the more general equipment covered in detail.

Continued next month

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Carbides—

(Continued from page 38)

tools will illustrate a few of the construction problems involved in applying carbides to the industry. *Arbor speeds* of woodworking machines ordinarily run higher than do those of metal cutting machines. Most modern sawing machines, within the 10" to 18" blade diameter range, operate at 3,600 r.p.m. on direct motor drive. Hand-fed shapers run at 4,000 up to 12,000 r.p.m. Molders, matchers and stickers vary from 3,600 r.p.m. upward with a frequency charger. One new type molder is provided with V-belt drive which allows a wide range of arbor speeds. (That carbides necessitate variable speeds is a theory gaining wide acceptance.) Most joiners and planers run at 3,600 r.p.m. *Work feeds* vary from 30 f.p.m. to the high speeds of the Northwest, where lumber is sized at feeds ranging from 200 up to 900 f.p.m. *Cutting circle* diameters for knife heads vary from 3" to 10⅝", utilizing as many as 14 knives. The front rake, or hook, of the cutting blade varies from 5° negative to 35° positive, depending upon the physical characteristics of the material to be cut and the type and condition of the machine. Included angles of the cutting tip will vary with the cutting angle. Included angles as low as 28° have been satisfactory.

Three Carbide Requirements

Carbides for wood cutting tools should conform to three basic requirements: (1) Ability to withstand shock; (2) Resistance to abrasion; (3) Capable of being ground to—and maintaining—a keen cutting edge. Requirements (1) and (2) are at opposite ends of the scale, of course, yet somewhere between these two extremes exists the best possible solution. Although possibly no carbide in production today meets all of these requirements, some grades are producing satisfactory results. Research

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and development will eventually produce better grades.

Maintenance of carbide wood cutting tools presents a serious problem. Carbide grinding equipment is not available in the great majority of woodworking plants. The prices of these grinders are somewhat shocking to the wood industry. However, one firm has recently produced a tool grinder for grinding straight and formed knives, router bits and circular saws—carbide tipped, conventional alloy or high speed steel. It is available in an acceptable price range.

Maintenance is handicapped further by the absence of trained mechanics who have experience in using or maintaining wood cutting tools, and have received special instruction on carbide grinding. Men taught to grind metal cutting carbide tools require some re-education prior to grinding wood cutting tools. The same situation would exist in changing a wood tool grinder over to grinding metal tools. The cutting angles, clearance angles and reliefs are different. Two wood technology schools have been approached already regarding the establishment of courses in carbide wood cutting tool maintenance. It is certain that the increased usage of carbide wood cutting tools will depend largely upon a satisfactory solution to this particular condition.

The wood industry is faced with the same basic problems that still prevail in the metalworking industry. Both industries are constantly faced with the questions of *when, where, why* and *how* to use carbide cutting tools. Many of these tools have been recommended and applied on jobs where they never should have been used. It is equally true that there are as many jobs where carbide tools could be applied to increase production and decrease work unit costs. These latter jobs are waiting for the right combination of production need, an increased knowledge of carbide possibilities and the ingenuity of tool representatives and tool supervisors.

Operation of carbide tools requires different techniques, speeds, feeds, and care than do high speed tools. Machines should be designed to provide the fastest production consistent with satisfactory quality finish. These machines should provide variation in arbor speeds and work feeds. Cutters are available to both industries with various cutting points or edges, depending upon the material. The best possible combination of arbor speeds, work feeds and tooth spacing is required for the most efficient carbide tool operation. There are few metal cutting machines which do not permit variations of both arbor speeds and work feeds. Practically no woodworking machine allows a variation in arbor speeds, although most power-fed machines do provide variations in work feeds.

The future success of carbide wood cutting tools depends upon the co-operation and co-ordination existing among the machinery builders, tool makers and carbide producers, and the woodworking industry . . . . and the ingenuity of the individuals within these groups. **END**

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PATENT DIGEST

by Royden C. Rinker

Saw Holder

A. F. Stone and E. A. Hayden. U. S. 2,572,405, Oct. 23. Holding claw attachment for a chain saw having a bumper shoe, comprising a base plate having a smooth top face, said base plate being proportioned to interlock separably with the bumper shoe, means extending from the base plate to space from the bumper shoe and a claw mounted on a bolt connecting the base plate and bumper shoe.

Composite Boards

P. F. Skoog U. S. 2,572,772, Oct. 23. Assembling wooden sticks into a board with a film of adhesive between adjacent faces in a continuous assembly.

Wood Finishing

D. P. Lehman. U. S. 2,573,105, Oct. 30. Finishing a smooth ring porous wood surface by cleaning the surface pores and providing a smooth surface having open topped visible pores separated at the plane of the surface by solid areas, applying a liquid pigmented primer finishing material over the solid areas between open pores by spraying at a low angle parallel to the surface, filling the pores with a filler to emphasize the grain and applying transparent coating thereover.

Wood Treating

E. Farber (to Timber Engineering Co.) U. S. 2,573,253, Oct. 30. Contacting with gaseous oxygen, aqueous ammoniacal boric acid solution containing metallic copper to produce cupric ammonium borate for wood treating.

Wood Rosin

W. G. Knox and G. L. Cunningham (To H. M. Hempstead and L. M. Hempstead) U. S. 2,573,454, Oct. 30. Dissolving rosin in naphtha, extracting with diethyleneglycol monoethyl ether, distilling off solvent, adding water to the ether solution, separating a color body solution, distilling off naphtha and distilling off the ether water solution to recover individual components.

Wood Treatment

A. E. Lundberg. U. S. 2,573,465, Oct. 30. Producing wooden planks resistant to warping by assembling glue coated wooden strips in a stack, deforming the strips in the stack along curved lines, maintaining stack pressure to retain deformed condition until the glue has set, sawing into slabs, assembling slabs in parallel and gluing slabs together to form a plank.

Wood Saw

C. E. Jenkins (to Bocjl Corp.) U. S. 2,573,573, Oct. 30. Saw having teeth along the cutter edge separated by spaces, each tooth having a wedge shaped web secured to one vertical edge and tapering from the tooth, the space between adjacent teeth ex-

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tending inwardly from the edge sufficiently to separate the webs.

Tall Oil

R. M. Christenson and R. E. Harpt (To Pttsburgh Plate Glass). U. S. 2,573,890, Nov. 6. Fractionating tall oil to separate the rosin acids from the fatty acids by esterifying the latter and extractively separating.

Woodwaste

E. Farber (To Timber Engineering Co.) U. S. 2,574,027, Nov. 6. Soaking ground wood with mineral acid, drying, heating below the decomposition point to covert a large portion of the cellulosic portion into lignin-like substances and recovering.

Wood Waste Removal

C. V. Anderson (To Anderson BlowPipe and Manufacturing Co.) U. S. 2,574,161, Nov. 6. Blower system for wood waste removal.

Building Sections

C. J. Blamford, Sr. (to Homasote Co., Inc.) U. S. 2,574,163, Nov. 6. Mechanism for fabricating building sections comprising a series of stations means at one of said stations for securing timbers together in predetermined positions to form a framework for said section, means for moving the framework past other stations, means for applying sheet securing means to said timbers and means for applying sheet material.

Wood Treating

E. Farber (to Timber Engineering Co.) U. S. 2,573,252, Oct. 30. Contacting aqueous ammoniacal arsenious oxide solution containing metallic copper with free oxygen, said solution containing ammonia whereby there is produced cupric ammonium arsenite for wood treating.

Wood Products

D. Chapman. U. S. 2,574,375, Nov. 6. Wood having a surface with natural grain and an applied design thereover which will generally be invisible.

Control

O. N. Hult. U. S. 2,574,393, Nov. 6. Apparatus for presetting the angular movement of a set shaft operative by a primary motor having a supply circuit, constituting a control for automatically presetting blocks on sawmill carriages.

Debarker

J. Astrom (to Svenska Cellulosa Aktiebolaget) U. S. 2,576,912, Dec. 4. Means for mounting a log, a structure rotatable about the log, and means for tensioning a flexible member against the log.

Flooring Blocks

C. W. Redin (to Bradley Lumber Co.) U. S. 2,577,630, Dec. 4. Machine for making wooden flooring blocks from wooden flooring boards.

Woodworking Machine

E. W. Hailston, C. F. Casey, and G. R. Melick (To Remington Arms Co., Inc.) U. S. 2,573,565, Oct. 30. Woodworking checkering machine.

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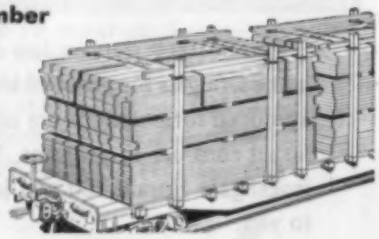

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Sheets of Hard Maple or Birch—No. 34

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Mahogany Plywood for Boat Building—No. 35

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Toilet Seat Lids and Blanks—No. 36

We would appreciate it very much if you could tell us where we could find a source of supply for toilet seat lids and blanks, sanded from waste wood. (Pa.)

Softwood Dowels—No. 37

We would appreciate the information as to where we could find a source of supply for softwood dowels. We require these to be ¾-in or ⅞-in in diameter and 26 in long. We can use these in large quantities. (N. Y.)

Bed Slats in Carload Quantities—No. 38

Can you send us the names of manufacturers of bed slats? We would be interested in carload quantities. (Pa.)

Wood Fuel Stokers—No. 39

We would like to have you send us the names of manufacturers of wood fuel stokers to burn shavings and sawdust mechanically. (Ind.)

If you have any problem of wood utilization, or cannot find the kind of material or machine for your particular purpose, SEND IT IN to the editor and we will put it in the WOOD PUZZLERS section.

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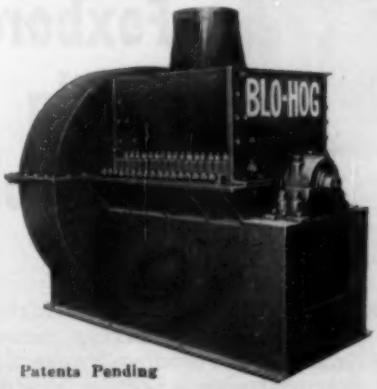

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Records show that Chevrolet trucks traditionally bring more money at resale or trade-in than many other makes. Chevrolet's market value stays up because the value stays *in!* More proof that Chevrolet is the best truck buy! See your Chevrolet dealer soon.

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TWO GREAT VALVE-IN-HEAD ENGINES—Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load • POWER-JET CARBURETOR—for smooth, quick acceleration response • DIAPHRAGM SPRING CLUTCH—for easy-action engagement • SYNCHRO-MESH TRANSMISSION—for fast, smooth shifting • HYPOID REAR AXLE—for dependability and long life • TORQUE-ACTION BRAKES—on light-duty models • PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES—on medium-duty models • TWIN-ACTION REAR BRAKES—on heavy-duty models • DUAL-SHOE PARKING BRAKE—for greater holding ability on heavy-duty models • CAB SEAT—with double-deck springs for complete riding comfort • VENTI-PANES—for improved cab ventilation • WIDE-BASE WHEELS—for increased tire mileage • BALL-TYPE STEERING—for easier handling • UNIT-DESIGNED BODIES—for greater load protection • ADVANCE-DESIGN STYLING—for increased comfort and modern appearance.

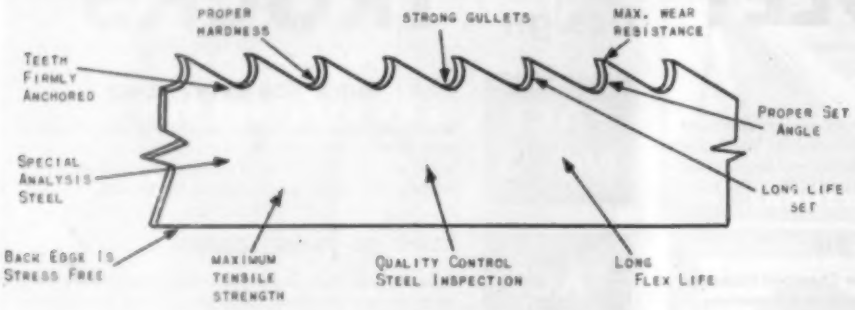
CHEVROLET DIVISION OF GENERAL MOTORS, DETROIT 2, MICHIGAN

first in demand in value in sales

CHEVROLET

NEW

Products . . . . processes
equipment . . . . methods
materials & developments



Saw Band for Friction Sawing

A saw band specifically designed for high-speed friction sawing has been introduced recently by The DoAll Co., Dept. W, Des Plaines, Ill.

Through the use of a special heat treating process the DoAll Friction Saw Band teeth are permanently anchored and locked in place. The metallurgical characteristics of the band are said to enable maximum flexation, resulting in long uninterrupted production sawing.

The technique of friction sawing entails ultra high saw velocities up to 15,000 feet per minute. At such speeds the material being cut is brought to the softening point through friction. On ferrous materials this point of plasticity is approximately the forging temparture of the metal. As the material is fed into the saw it becomes soft and is removed from the kerf by the teeth of the high velocity blade.

Booklet on Fractional Horsepower Motors

A new line of fractional horsepower motors embodying an entirely new concept of motor design and manufacture has been announced by the General Electric Co., Dept. W, Schenectady 5, N. Y.

The advanced design incorporates a completely new insulation system developed for this project. It consists of a special nylon material scientifically combined with Formex wire and Glyptal (Trade Marks Registered) varnish to give the motors longer life.

The Form G also makes more efficient use of existing materials, and features a long list of design "firsts." Among these are new bearings, lubrication system, insulation, ventilation, mountings, windings, end shields, terminal board, and leads.

Pine Standards Booklet

A limited number of copies of the PROPOSED COMMERCIAL STANDARD FOR STOCK PONDEROSA PINE INSULATING GLASS, WINDOWS AND SASH can be obtained by writing to the Commodity Standard Div., Office of Industry and Commerce, U. S. Dept. of Commerce, Washington 25, D. C.

Payoff
at the
CUT-OFF

Labor is money! That's why L-M Electric Chain Deck Saws *really* pay off at the cut-off...*they reduce your labor costs.* With the new Wide Kerf Chain, L-M Deck Saws are cutting 40-inch logs to length in less than 60 seconds per cut. Gas or electric power available. Bar length available (in stock) 3 to 10 feet.

Immediate Delivery

Write us for users' names in your vicinity. Also for complete details about L-M pond and deck saws.

Pond and Deck Saws • Log Splitters
Chains and Bars for All Chain Saws

Illustrated is L-M Deck Saw with 88-inch bar and hydraulically-controlled lift, mounted on movable carriage . . . at the C. D. Johnson Lumber Corp., Toledo, Oregon

Photo courtesy The Timberman

L. M. EQUIPMENT CO.

401 S.E. CLAY ST. • PORTLAND 14, ORE. • Phone VE 3146 • Cable Address: "LMEQ PORTLANDORE"

New Electric Fork Truck

Lewis-Shepard Co., Dept. W, Watertown, Mass., is announcing the development of a new Electric Fork Truck (1500 lbs. capacity) specifically designed for docks, warehouses and terminals. The SpaceMaster "59" model, was developed over a long period of consultation with motor freight companies and actual freight dock testing.

The tests proved these features: Rugged for the roughest duty; 59 inch turning radius for maneuverability in narrow aisles; extra pep in lifting (50 F.P.M. loaded) and extra "go" in hauling (6 M.P.H.); no grease points and no under truck adjustments for lower maintenance costs.

New Type Pulpwood Saw

A faster way to cut pulpwood is said to be developed by the Mall Tool Co. Dept. W, 7725 S. Chicago Ave., Chicago. It is the Mall Pinchless Chain Saw, which introduces exclusive "plunge cutting".

This pinchless "plunge cutting" method is said to simplify the cutting of pulpwood, for the saw does all the work. It eliminates lifting the saw in and out of the cut. The operator merely guides the saw through the wood using the front vertical cutting edge.

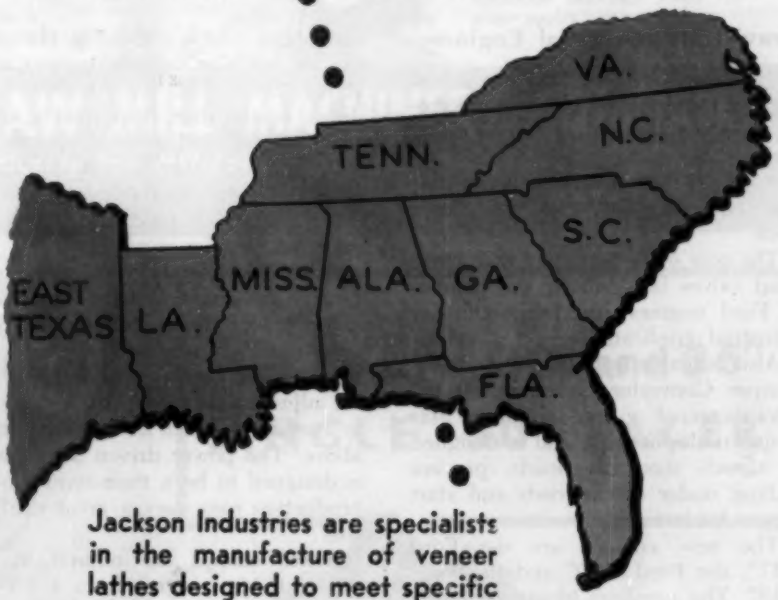
Over

170 JACKSON VENEER LATHES

IN OPERATION IN THE SMALL AREA SHOWN BELOW ALONG WITH NUMEROUS OTHERS THROUGHOUT THE COUNTRY.

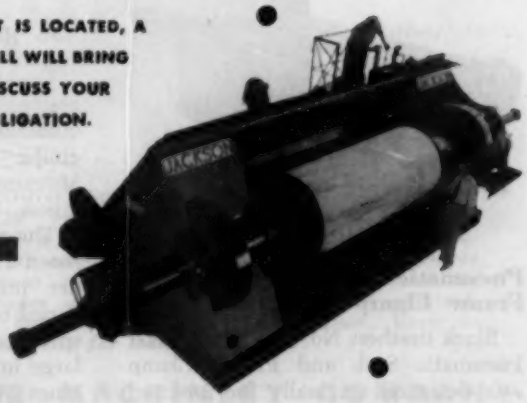
Such Widespread Acceptance must be Deserved!

If Your Lathe Department is not operating with MAXIMUM EFFICIENCY, WE CAN HELP YOU!

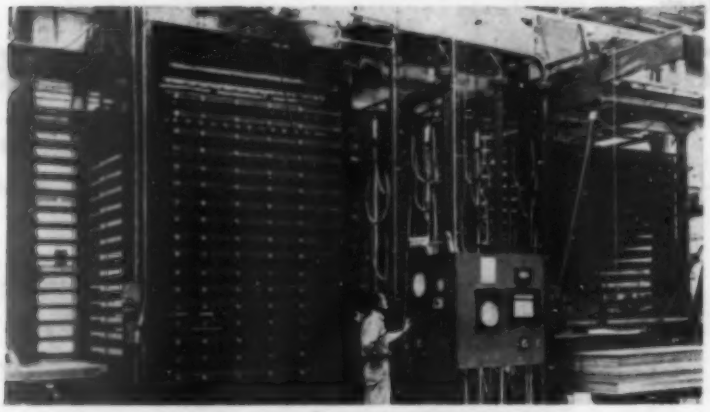


Jackson Industries are specialists in the manufacture of veneer lathes designed to meet specific job requirements.

NO MATTER WHERE YOUR PLANT IS LOCATED, A LETTER, WIRE OR TELEPHONE CALL WILL BRING A JACKSON ENGINEER TO DISCUSS YOUR PROBLEMS. THERE IS NO OBLIGATION.



JACKSON INDUSTRIES, INC.
VENEER MACHINES DIVISION
BIRMINGHAM, ALABAMA



Hydraulic Presses

The first hydraulic presses to use superheated water as the heating medium have been installed in the Anderson, Calif., plant of United States Plywood Corp. to manufacture Novoply, a laminated wood panel. They are 1820 and 873 ton units supplied with pre-pressed material by a 775 and 350 ton unit respectively to form two lines producing boards of different thickness. All presses were manufactured by Baldwin-Lima-Hamilton Corp., Philadelphia, Pennsylvania.

Heavy-Duty Industrial Engines

Three new heavy-duty industrial engines designed for greater efficiency, performance and operating economy are being produced by the Ford Motor Co., Tractor and Industrial Engine Division, Dept. W., Dearborn, Mich.

The new units, equipped with overhead valves bring to six the number of Ford engines especially built for industrial applications.

Also available is a new Ford Multa-Torque Converter. It offers all the advantages of a fluid coupling plus torque multiplication, and is designed to absorb shock overloads, prevent stalling under excess loads and start bigger loads faster.

The new engines are the Ford "317", the Ford "279" and the Ford "215". The numbers identifying each engine correspond to its displacement in cubic inches.

Pneumatic Sash and Frame Clamp

Black Brothers No. 200 High Speed Pneumatic Sash and Frame Clamp was designed originally for prefitted and non-prefitted window sash. Other assemblies which are being clamped in this machine include screens and screen doors, storm windows and doors, combination door inserts, cupboard doors, and a wide variety of furniture and other frames. The machine is likewise available in a heavier model making it suitable for mortised doors and similar work.

In addition to the regular models, several optional electric and pneumatic power driven adjustments are now available for the first time. A typical arrangement with air motors for adjusting the clamp from one size to another is shown in the illustration above. The power driven adjustment is designed to be a time-saver where production runs vary a great deal in size.

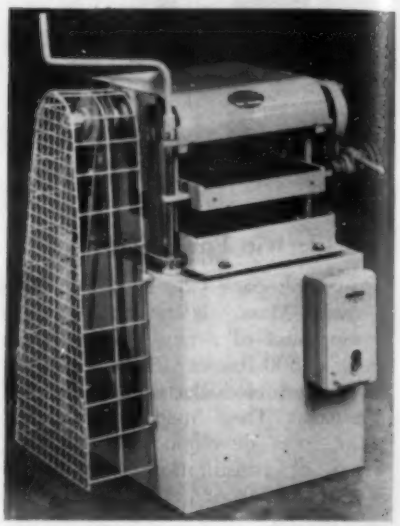
These clamps are offered in 15 different sizes ranging from 4′ x 4′ to 8′ x 8′ by increments of one foot in each direction. Descriptive material and a representative list of users are available upon request from The Black Bros. Co., Inc., Dept. W Mendota, Ill.

New Resin Adhesive

Development of a new resin adhesive, engineered to fulfill exact requirements for a host of different gluing jobs, is announced by the Monsanto Chemical Co., Plastics Division, Dept. W, Springfield, Mass.

The new all-purpose product, designated Lauxite UF-71, is a neat powder urea formulation that can be varied to meet a multiplicity of gluing specifications previously necessitating large inventories of different types of glues. As a result, Monsanto believes the formulation will be a vital factor in reducing adhesive inventory requirements.

The new urea resin adhesive also features exceptional storage stability. Unlike many other adhesives, it is unaffected by sharp temperature fluctuations and prolonged storage periods.



Floor Model Planer

The Belsaw Machinery Co., Dept. W, 315 Westport Rd., Kansas City 2, Mo., has just introduced a new Planer, Model 909, with the accent on compactness, speed and the quality of finished material.

An earlier model, No. 905, will plane stock up to 12¼ in. wide and up to 6 in. thick, with a rate of feed of 24 feet per minute. The Model 909 offers the same speed, the same rigid planer table, the same round steel cutterhead, with precision, self-aligning ball bearings as does the model 905 Bench Planer. Overall, the Model 909 is 32 in. wide, 42 in. long and 37 in. high. Write the manufacturers for complete details.

Single Surface Planer Bulletin

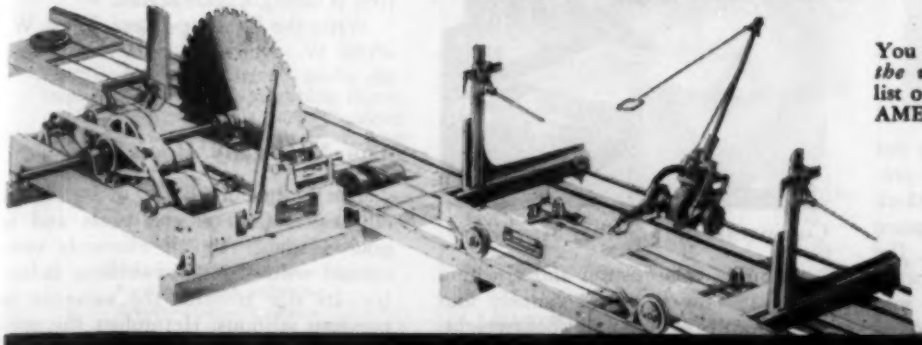
Bulletin No. 61, describing one of its leading surfacers, has just been issued by the Buss Machine Works, Dept. W, Holland, Mich. This Planer was introduced to the trade in 1939. As new planer features have been developed, they have been built into this machine.

Hard chrome plated Beds and Bars; Heavy built-in, one piece Grinding and Joining Bar with long traveling head that carries the grinding motor and jointing device; and the One-Shot Automatic Metered Oil Lubrication are some of the latest, fully illustrated and described in the bulletin.

YOU ASKED FOR IT-
AND AMERICAN HAS IT

In a nation-wide survey just completed among thousands of lumbermen, the great majority put these vital needs first in saw mill machinery:

1. ***CUTTING ACCURACY***
2. ***LABOR SAVING FEATURES***



You asked for them — and they are *the very advantages* that head the list of *many benefits* found only in AMERICAN mill equipment.

Write today or see your local American dealer for detailed specifications. Tell us your type of lumbering operations and we will recommend the best units for your needs.

AMERICAN SAW MILL MACHINERY COMPANY

Quality Saw Mill Equipment Since 1903

206 MAIN STREET — HACKETTSTOWN, NEW JERSEY

Model RC-1

SEE HOW THIS DELMHORST MOISTURE DETECTOR SAVES YOU TIME AND MONEY!

- Enables you to make rapid moisture tests of any wood product —timber, poles, lumber, or finest veneers—without loss of material.
- You can know exactly whether the wood contains the right moisture content for storage, process or shipment.
- Quickly gives you the precise moisture content, distribution or gradient of moisture within a single piece of wood or kiln load.
- Enables you to sort stock of equal moisture content for loading the kiln and to tell whether or not the stock is ready to come from the kiln.

". . . has paid for itself several times."

says Texarkana Lumber & Supply Company

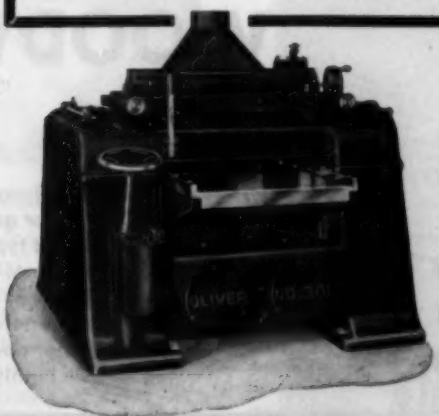
"We have been using your moisture detector both inside and outside of our dry kiln. By determining the moisture content of the lumber before planing, we are able to prevent the stock from bluing or molding in the bins after the stock is stored in the finish sheds. In this way the instrument has paid for itself several times."

Write for complete information or send for a Delmhorst Model RC-1 Moisture Detector on 10 days FREE trial.

DELMHORST INSTRUMENT COMPANY

603 CEDAR STREET • BOONTON, NEW JERSEY

"OLIVER" 30" and 36" SINGLE SURFACER

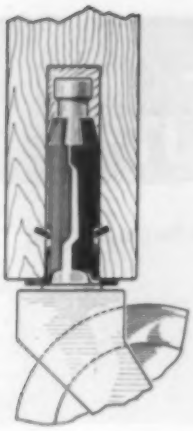


LATEST FEATURES . . . does smoother work faster than ever!

This "Oliver" smoothly planes soft or hard woods up to 30" and 36" wide, up to 8" thick, at speeds up to 60' a minute. Has one-piece inclined bed supported by one-piece wedge. One-piece base assures permanent alignment of working parts. Bed has micrometer adjustment for aligning bed and cylinder. Fully enclosed feed mechanism. Easy to operate. *Write for Bulletin No. 361.*

OLIVER MACHINERY COMPANY

Established 1890 — GRAND RAPIDS 2, MICHIGAN



New Speed Clip

Annoyance of casters dropping out while furniture is being moved is prevented by a Speed Clip (Trade Mark Registered) announced by Tinnerman Products, Inc. Tubular in shape, the clip is formed of heat treated spring steel. When the clip is pushed into a slightly undersized hole in wooden furniture leg by means of a drift pin, two retaining barbs are forced outward and embedded in the wood. When the caster stud is inserted and snapped into place it is firmly retained by the tapered end of the clip.

The Speed Clip can be used with any standard caster. It is 1 17/64 inch long, with an outside diameter of .390 inch.

Further information can be obtained from Tinnerman Products, Inc., Dept. W, Box 6688, Cleveland, Ohio.

Compression Testing Machine

Accurate compression and crushing tests can now be made quickly and easily with a low-cost lightweight, portable hydraulic compression machine. It has been used on metal, ceramic, wood and plastic parts; on paper boxes and other containers and on soils, springs and similar materials.

In this machine the load is applied to the test specimen through a hydraulic system actuated by compressed air. When connected to a convenient air source it is ready for testing and no warm-up period is required. The load applied to the specimen is indicated on the dial of a double proving ring. This double proving ring is used to obtain greater accuracy in the low range in tests which will involve large loads and to eliminate the necessity of changing rings for different tests. When the capacity of the more sensitive outer ring is reached, the heavier inside ring is brought into action.

Write the Labquip Corp., Dept. W, 4520 W. North Ave., Chicago 39, Ill.

The Mahogany Book

The Mahogany Book, in its eighth edition, is just off the press and is now available to all elements concerned with the woodworking industry. Its size remains the same as in previous editions. Heretofore the covers have been a reproduction of Mahogany, each edition in a distinctive pattern. The cover of the new edition shows twelve different finishes on Mahogany, from light to dark. These illustrate the wide range of finishes

turn LOSS INTO PROFIT
with SYNVARITE 170 HL • SYNVAROL WR 515 C
SYNVAREN CP-25
WOODWASTE BONDING RESINS

Wood waste in the form of shavings, wood-chips, sawdust, wood-flour or ground wood can be successfully bonded regardless of hard or soft types of wood with our newly perfected Synvarite 170HL, a phenol-formaldehyde resin in powder form or our Liquid Resins: Synvarol WF-515-C, a urea-formaldehyde type and Synvaren CP-25 a phenol-formaldehyde type. Articles, such as door panels, boards, table tops, toilet seats, floor tiles, etc., using these resins are highly water resistant.

SYNVAR RESINS

Write for General Information folder

SYNVAR CORPORATION
WILMINGTON 99, DEL.

Manufacturing Phenolic, Urea, Resourcinol and Polyester Resins for all industries since 1939

Save Time With Our
Fine Oak Dimension Stock

- KILN DRIED
- FLAT
- GLUED-UP
- SOLID
- STRAIGHT
- SURFACED

Furniture manufacturers make savings when they use Memphis Hardwood Flooring Co.'s semi-finished dimension stock. No time wasted means lower costs and better profits.

Send us your specifications for quotations

Chickasaw Brand Oak Flooring
Pre-finished and unfinished
Treads—Risers—Thresholds

MEMPHIS
HARDWOOD FLOORING CO.
Since 1905
1591 Thomas St. • Memphis, Tenn.

Handle Dry Kiln Doors
SINGLE-HANDED?

You can do it with
The Universal DOOR CARRIER

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

Write for further facts!

Universal DOOR CARRIER, INC.
1117 Cornell Avenue
Indianapolis 2, Ind.

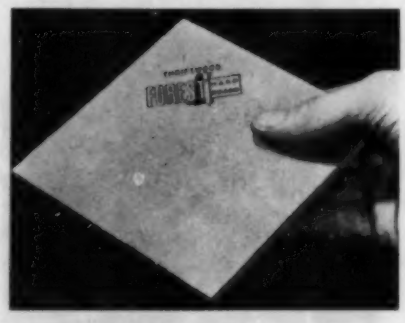
that are possible on Mahogany, to meet modern needs.

It may be obtained by addressing the Mahogany Association, Inc., Dept. W, 75 E. Wacker Drive, Chicago 1, Ill.

Fitted Hose Lengths

Schrader Air-Operated Ferrule Contracting Machine No. 1765 is said to make it possible to speed production where quantities of uniform, fitted hose lengths are required.

Interchangeable dies enable the machine to be set up quickly for various size ferrules. Fast operation with air-tight application of the ferrule is a feature of this unit. The foot pedal operation permits the use of both hands to feed and remove the work. Easily hooked up to any shop air line. Write A. Schrader's Son, Division of Scovill Mfg. Co., Inc., Dept. W, 470 Vanderbilt Ave., Brooklyn 17, N. Y.



New ¼-inch Hardboard Panel

A new, low priced, light density ¼-inch hardboard panel, called, Thriftwood, designed especially for general interior use such as wallboard, underlayment, built-ins and cabinet work is being manufactured by the Forest Fiber Products Co., Dept. W, Forest Grove, Oregon.

The new hardboard is an all wood panel made of Douglas fir fibers which are treated and welded together under heat and pressure. It has the stiffness and strength necessary for interior wall construction and industrial and fabrication purposes and is easily sawed, nailed, planed, glued the same as wood.

See how
MOISTURE REGISTER
saves you money!

MOISTURE REGISTER instruments

- Cut down costly finished product rejects.
- Make sure your lumber meets moisture specifications for grade.
- Reduce customers complaints and insure consistent production quality.
- Save man hours because Moisture Register tests in seconds. Oven tests take hours.
- Save freight costs. You don't pay for excess moisture.
- Save on overhead. Wet lumber increases tool maintenance.

Moisture Register Model K2D in use at Mansion House Furniture Company, Los Angeles.

Moisture Register instruments are simple to use. They show you when wood is exactly right for most efficient cutting, bonding, fitting and finishing.

Models priced from $60 to $148.50 both radio frequency and needle type. Test 80 wood varieties, wood products, wood waste and plaster, down to 0% in three seconds or less. Rugged, portable. One year guarantee. Write for complete information on Moisture Register instruments specially designed for the textile, leather, paper, wood and wood products industries.

ELECTRONIC MOISTURE REGISTER

Mfd. by Moisture Register Co.
1510 W. Chestnut St., Alhambra, Calif.

10-day free trial on any model. Write today, outlining your requirements. No obligation.

KILN DRIED
LUMBER

FOR

immediate shipment

EITHER TRUCKLOAD OR CARLOAD LOTS

Northern Hardwoods

Basswood	4/4 to 6/4
Birch	4/4 to 8/4
Hard Maple	4/4 to 8/4
Soft Elm	4/4 to 12/4

Appalachian Hardwoods

Beech	5/8 to 10/4
Red Oak	5/8 to 8/4
White Oak	5/8 to 8/4

Southern Hardwoods

Ash	4/4 to 8/4
Basswood	4/4 to 6/4
Hackberry	4/4,to 5/4
Sap Gum	5/8 to 8/4
Tupelo Gum	4/4 to 8/4
Red Gum	4/4
Soft Maple	4/4 to 12/4
Sycamore	5/8, to 8/4
Poplar	3/4 to 12/4
Hickory (AD)	8/4
Cypress (AD)	4/4

Mahogany

Honduras	3/4 to 12/4

Walnut

Steamed	5/8 to 8/4

Pine

Parana (Brazilian)	4/4, 5/4

The above hardwoods are in No. 1 Com. & Better Grades

and generally are available in higher grades.

Your inquiry will receive prompt and courteous attention

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HARDWOOD
LUMBER CO.
3304 W. Belmont Ave.
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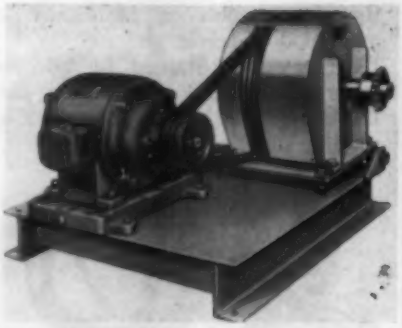
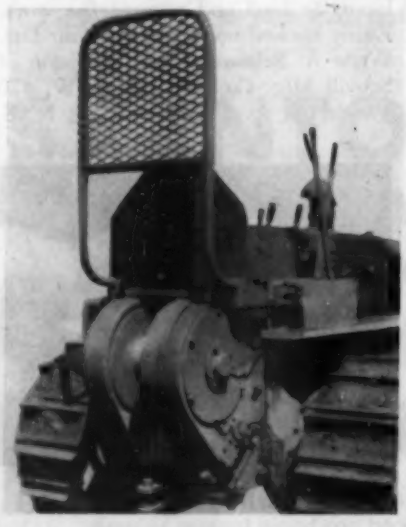


Clipper Drive

Merritt-Solem Corp., Dept. W, Lockport, New York announces the development of a new veneer clipper drive that is said to be rapidly gaining wide acceptance.

It is a compact unit, and transmits power by means of an electric clutch and brake. The interesting feature lies in the total absence of brake bands as heavy duty armatures and magnets are engaged in the proper sequence to operate the clipper knife. Being electric, it is possible to have any type control desired including full automatic measuring devices.

It is called the CCB-50 Drive Unit and in addition to clipper operation has numerous other applications.



HySpeed Winch

A new D4 HySpeed Winch has been developed by the Hyster Co., Dept. W, 2902 N.E. Clackamas St., Portland 8, Ore.

This winch can be mounted on either seat or fender tank type "Caterpillar" D4 Tractors. It has many applications as a production tool, as well as for service, maintenance and general utility. A few of the jobs it will perform are lifting, pulling, crane work, light pile driving, ground skidding logs, bundling pulp logs, skidding bundled pulpwood and for "feeder cat" work in logging.

All Northern Hardwoods
Lumber
Veneers
Plywoods
NHV
Phone, Wire or Write
NORTHERN HARDWOOD VENEERS, Inc.
Butternut • Wisconsin

$200,000.00
AUCTION SALE

Of The Associated
Box & Crate Co.
Stockton, California

The U.S. District Court has commissioned us to sell at PUBLIC AUCTION FOR BENEFIT OF THE CREDITORS all Equipment, Machinery, including the buildings.

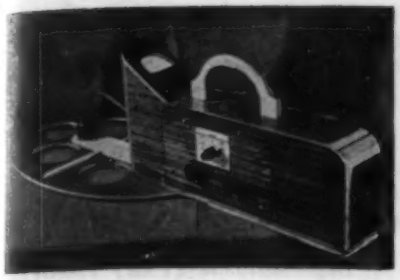
NAME YOUR OWN PRICE for: FORKLIFTS — RESAWS — CRANES — BLOWERS — TIE MACHINES — CONVEYORS — PLANERS — SAWS — MOTORS — NAILING & CLEAT MACHINES — GRINDERS — RIPPERS — TRANSFORMERS — AUTOMOTIVE & GARAGE EQUIPMENT —COMPLETE FILE SHOP — ALL KINDS WOOD WORKING EQUIPMENT, ETC.

For information, wire, write, or phone . . .

LOUIS ALBERT, Auctioneer
1018 Clay St., Oakland, Calif.
Phone TEmplebar 6-2088

Sale to be held on the above premises, foot of Washington and Mormon Dock, Stockton, Cal. on April 15th, commencing 10:30 A. M.

UNIVERSITY OF MICHIGAN LIBRARIES



The Hedden Metal Detector

The Model D.C. II Hedden Metal Detector is being extensively used in the lumber industry. This 10 pound instrument can locate a six penny nail in the heart of a 20-in. diameter log. The unit works both horizontally and vertically and operates on batteries. It is easy and simple to use and operate. The detector head is designed so that an exact fix indicating where the metal is located in the log or wood is quickly obtained. The Hedden Metal Detector is a money saver in saws, veneer knives and downtime. Write for complete information today.

Hedden Metal Detectors
Dept. W
3329 Liberty Avenue
Pittsburgh 1, Pa.

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10 Minute Glue Cuts Costs SPEEDS PRODUCTION

Glued with Colpres 10, hardwood or softwood parts are ready for machining in

ONLY 10 MINUTES

A quick setting, two part urea resin adhesive that sets at room temperature, Colpres 10 is water-resistant, non-staining, and unsurpassed for strength and its cold, quick setting characteristics.

HAVE YOU TRIED COLPRES 10?

Get your FREE sample, with full instructions, by sending us this ad clipped to your letterhead.

(WWP)

TIMBER ENGINEERING CO.
1319 18th ST., N.W., WASHINGTON 6, D. C.

Compound Sets Anchor Bolts

Anchor bolts for permanently fastening machinery, hand rails, seats, or equipment of any type to concrete, can now be set easily, quickly and with safety by using Por-Rok Quick Setting Cement.

Por-Rok successfully replaces critical lead and sulphur for most bolt-setting operations. Applied cold, there is no heating hazard.

Por-Rok is simple to use. Drill hole, set bolt in place, mix Por-Rok with water, and pour into opening around bolt. Within 15 to 30 minutes, the bolt is anchored permanently. Write The Hallemite Manufacturing Co., Dept. W, 2446 West 25th Street, Cleveland 13, Ohio.

Instrument Panel for Fork Trucks

According to a recent announcement by the Clark Equipment Co., all of its gas-powered Carloader and Clipper Model Fork Trucks are now equipped with a newly-designed instrument panel included as standard equipment. This panel is attached to the steering column directly in front of the driver to insure good visibility at all times.

The panel includes fuel, temperatures and oil-pressure gauges, ammeter, ignition switch, horn and Mico brake control fuses and starter button. The Mico brake push button is located on the back side of the panel. Space is also provided for the installation of a Hobbs Hour Meter as extra equipment when required.

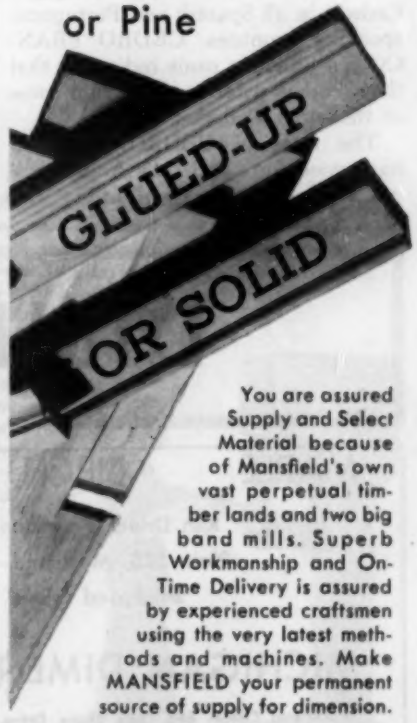
For further details, write the Clark Equipment Company, Industrial Truck Division, Dept. W, Battle Creek, Michigan.

No Waste No Worry No Regrets

WHEN YOU BUY

MANSFIELD Micro-Made DIMENSION

Hardwood or Pine



You are assured Supply and Select Material because of Mansfield's own vast perpetual timber lands and two big band mills. Superb Workmanship and On-Time Delivery is assured by experienced craftsmen using the very latest methods and machines. Make MANSFIELD your permanent source of supply for dimension.

MANSFIELD HARDWOOD LUMBER COMPANY
Post Office Box 91
Shreveport, Louisiana

Mills: Zwolle and Winnfield, Louisiana
Dimension Plant: Zwolle, Louisiana

Foreign Woods . . .

by GEORGE LAMB

CEDRO BRANCO
—*Cedrela huberi*

Meliaceae (Mahogany) Family

Cedrela is one of the numerous genera of the Meliaceae family of wide tropical distribution, the woods of which have a wide variation in appearance and properties. Of these woods Mahogany from Tropical America and Africa are the best known and most highly prized. Best known in the United States of the Cedrelas is Spanish cedar (Cedrela odorata), long known as a cigar box wood. Cedrela grows in all countries south of the United States.

CEDRO is the name used for Cedrela in all Spanish and Portuguese speaking countries. CEDRO BRANCO is a Brazilian name indicating that the wood is paler in color than some of the other Cedrelas.

The trees of CEDRO BRANCO have good form and vary from medium to large. Its general utility and durability make it valuable for local use but with the passing of the wooden cigar box trade Cedrelas have not found a wide market in this country.

The heartwood is salmon pink when freshly cut but upon exposure becomes a light reddish brown. The sapwood is whitish. The texture is medium and the grain is straight and uniform. It seasons well. It is of less than medium hardness and weight. Sp. gr. 0.33 to 0.41, well below that of Mahogany.

CEDRO BRANCO is not likely to become an important wood in this country because it lacks the strength and hardness of an ideal cabinet wood and the oil that it contains may interfere with finishing processes. Its stability and resistance to decay are its most desirable features.

Other names for CEDRO BRANCO:
None

Other woods called CEDRO (all species of Cedrela, also):

Cupressus sp.....Mexico
Juniperus sp.....Mexico
Libocedrus sp.....Argentine
Metopium sp.
(Cedro prieto).....Puerto Rico
Poupartia sp.
(Cedro blanco).....Brazil
Tapirira sp.....Venezuela
(and others)

CARABALI
—*Albizzia caribaea*

Leguminosae (Pea) Family

Albizzia is a pan-tropical genus with the Siris tree of Asia being the most famous as it has been widely planted in the tropics as a shade and ornamental tree. It bears a mass of fragrant yellow flowers.

A. caribaea is found in Venezuela at elevations from 300 to 900 feet and is commonly associated with Mahogany, cedro and possum wood. It reaches a height of 90 feet and a diameter of three feet. Clear length is seldom more than 32 feet. It is of commercial size but is not a jungle giant.

The heartwood is bright yellow when freshly cut but later becomes a pale yellow. The sapwood is 3 to 4 inches wide and varies from white to cream in color.

Usually it has a straight grain with rather coarse uniform texture. CARABALI is quite heavy with a specific gravity of from 0.58 to 0.74. The shrinkage properties of CARABALI

DIMENSION STOCK

SOLID • GLUED UP • MACHINED TO SPECIFICATIONS

MAPLE BIRCH BEECH
Kiln Dried Dimension Stock
Plain S2S—Machined—Turned
Solid and Glued Up
MICHIGAN DIMENSION CO.
General Office: 666 Lake Shore Drive, Chicago 11, Illinois
Factory: Manistique, Michigan

Manufacturers of
Precision Kiln Dried
HARDWOOD DIMENSION
Finished and Semi-Finished
FURNITURE & INDUSTRIAL STOCK
Bed Rails, Glued Up Tops & Core Stock
Fordyce Wood Products, Inc.
Box 312W, Fordyce, Arkansas

PLYWOOD DIMENSION
•
SOUTHERN HARDWOODS
⅝-in. and Thicker—Fully machined, circled, bored, shaped, etc.
•
WILLIAM B. COGGIN, INC.
80 E. Jackson Blvd. Chicago 4, Illinois
Telephone HArrison 7-3555

Carlton Smith Industries, Inc.
Glued-Up Furniture Dimension
P. O. Box 326 Phone 23
Bearden, Arkansas

are low. This wood has been tested for the Navy but it is doubtful that it will be found useful as there are better woods.

Other names:

Bacona (rattling seed pods sound like frying)	Cuba
Bois savanne	Haiti
Bolillo	Mexico
Prickley yellow, wild tamerind	British Honduras
Gavilina	Costa Rica

Other woods called CARABALI:

Samanea sp.

PEROBA DE CAMPO
—Paratecoma paroba

Bignoniaceae
(Trumpet Creeper Family)

There is only one species of Paratecoma which is a large and important forest tree of Eastern Brazil. It reaches a height of 130 feet and a diameter of 5 feet. It may have as much as 95 feet of clear length. The timber is well known in Rio de Janeiro where it is called PEROBA, a name more often applied to species of Aspidosperma.

The sapwood is white or yellowish and sharply defined from the heartwood which is light olive with a greenish, yellowish or reddish hue. Sometimes it is indistinctly striped. PEROBA is moderately hard and heavy. Sp. gr. 0.70 to 0.83. Grain straight to curly, texture medium. It is not difficult to work, finishes smoothly and is durable. It is considered an excellent cabinet wood.

Other names:

Ipe peroba	Brazil

Other woods called PEROBA:

Aspidosperma peroba	Brazil
Amargoso	Brazil
Palo rosa	Brazil and Argentine.

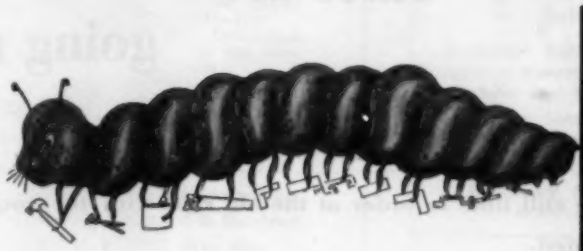
Stryker

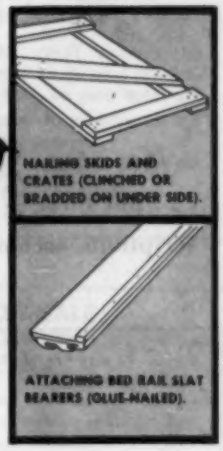
(Continued from page 23)

runner of other modern adhesives that have made much of this expansion possible.

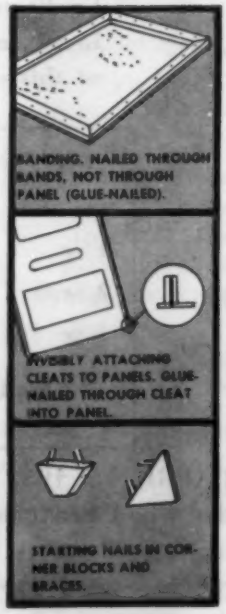
J. B. B. Stryker is recognized as a leading authority on the Dutch Indies, having spent several years there as head of the Perkins Java plantation bearing the name"Cultuur Maatschappij Stryker" in his honor.

Affectionately known as "JB" to all his co-workers, Stryker now lives in Tucson, Arizona and keeps in touch with business through sons James and Julius, Jr. who operate the Lansdale, Pa. plant. He had two other sons—one lost his life in World War II—and a daughter, an authoress. Her latest novel is "Time for Tapioca".

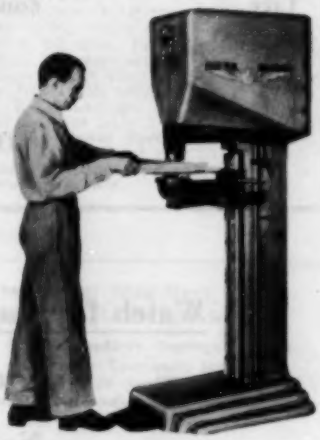




A 1-man furniture factory?


BANDING. NAILED THROUGH BANDS, NOT THROUGH PANEL (GLUE-NAILED).
INVISIBLY ATTACHING CLEATS TO PANELS. GLUE-NAILED THROUGH CLEAT INTO PANEL.
STARTING NAILS IN CORNER BLOCKS AND BRACES.

That would be swell—but the next best thing is an Auto-Nailer* . . . A tireless, errorless, miracle-worker performing at lightning-speed countless jobs in the furniture factory. Auto-Nailer makes, drives and countersinks 3 nails a second, straight or bradded, clinched or just started. For work without glue, it's great. For glue work, it eliminates clamps and production time lost while glue sets. Auto-Nailer's 1,000 pound squeeze glue-nailing enables you to continue production while the glue sets. If you employ 3 or 3,000—*get Auto-Nailer.*



LIKE TO SEE SOME SAMPLES? Send us specimens of your work. We'll be happy to demonstrate Auto-Nailer's virtue and versatility, no obligation.

SPARTAN
for heavy-duty work.
CRUSADER
for lightweight tasks.

WRITE FOR FREE CATALOG

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TRADE MARK REGISTERED

AUTO-NAILER CO.
267 MARIETTA ST., N. W. • ATLANTA GEORGIA

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Subscription rates are going up on April 15th!

. . . but there is still time to order at the old rate with the coupon below—new and renewal subscriptions accepted.

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☐ **Enter a NEW subscription for me immediately so that I may take advantage of the special low rate.**

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Check is enclosed for:

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	Present Rate	New Rate	YOU SAVE
1 yr	$2	$4	$2
2 yr	$3	$6	$3
3 yr	$5	$8	$3

(Foreign rate—$10.00 for one year)

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Offer only to those in the Wood Products Industry

Watch for these coming features:

Gluing and Machining of finger-jointed cut stock

New methods for control of stain in hardwood lumber

Maintenance Program for cutters and knives

How Built-in furniture will affect the furniture market

Electric Motor Maintenance

Mail The Above Coupon Now While The Extra Low Rates Are Still In Effect

WOOD TRADING POST

139 N. Clark St., Chicago 2, Ill.

HELP WANTED

WANTED
BILLER AND DETAILER

For special millwork house in Southern New England to make full-size details and material bills of architectural woodwork. Permanent position with one of oldest millwork firms in New England. Advise fully as to references and qualifications. Write Box A 175, WOOD.

GENERAL SUPERINTENDENT—to run high production furniture factory of case pieces, tables and chairs; some veneer experience desirable. Company long established located in midwestern city. Give age, past 15 years background, education, family ties, starting salary expected, and all details. Enclose snapshot if possible. Excellent opportunity to right party to ultimately become plant manager. Our present superintendent leaving in April. Box A-190 Wood & Wood Products.

TECHNICAL SERVICE REPRESENTATIVE

Leading manufacturer of adhesive resins for plywood and related industries is seeking a technical service representative. Technical training, experience in the woodworking industry and willingness to travel required. Will act as intermediate between sales management and sales personnel in the field and work closely with our Research Department. Our staff knows of this opening. Please send a complete resume of your qualifications to Box A-189 Wood & Wood Products.

WANTED

Experienced moulding sticker man by old established millwork manufacturer. Must be able to make own setups and grind knives. Address Box A-185, Wood.

POSITION WANTED

PLT. MGR. or EXEC. ASSIST.-Mech. Eng'r. 17 yrs. woodworking exp. Plant set-up, production, mach. dev., fact. office procedures, lumber buying, kilns, milling, maint., warehousing. Dependable, keen analysis, sound judgement. Write Box A-188 WOOD & WOOD PRODUCTS.

EMPLOYMENT

J. L. OVERHOLT
WABASH EMPLOYMENT AGENCY
202 S. State St.—Chicago, Ill.
Places all types of Woodworking Executives, Gen. Mgr., Works Mgrs., Superintendents, Etc.

LUMBER, PLYWOOD, ETC.

BOX LUMBER
Rough — S2S — Resawn Center
4/4" - 5/4" - 6/4" - 8/4"
Gum, Tupelo, Elm, Cottonwood
Willow, Yellow Pine and Misc. Hardwoods
CRAIG LUMBER CO.
325 Falls Bldg. Memphis 3, Tenn.

Kiln Dry, Solid Dimension, Rough, Surfaced & Moulded, Maple, Birch, Oak, Elm, Basswood, 4/4, 5/4 & 6/4.

R. W. Marquardt
Box 316, Phelps, Wis.,

WEST COAST LUMBER
Kiln Dried Douglas Fir Industrial Clears All thickness to 16/4 Millwork Stock Rough or Surfaced Mouldings, Ladder Rails and Cut Stock
Al Clements Lumber Co.
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TWX EG 049 Phone 5-3317

Always in position to supply 4/4" thru 8/4" Gum, Poplar & Elm, rough, dressed or resawn. Stock widths usually available. Inquiries handled promptly. Harry B. Weiss, P. O. Box #392, Memphis 1, Tenn. Phone 8-3146.

BUSINESS OPPORTUNITIES

FOR SALE
Plant in South West Wisconsin covering 14 acres with 100,000' sprinklered floor space. Fully equipped Mill work and furniture plant as well as complete Veneer and Plywood manufacturing plant operating successfully in good low cost labor market.
Owner wishes to retire and sell as complete unit for immediate occupancy. Write Box A-187 WOOD & WOOD PRODUCTS.

BUSINESS OPPORTUNITIES
Well established 4A1 company with large directly controlled production and substantial wholesale business has opening for the right man who should be between 30 and 40 years of age and have a reasonable background in the wholesale business, principally in Appalachian and Southern Hardwoods, as well as Yellow Pine.
This is a splendid opportunity for the right individual not only for security but earnings.
Give complete history in reply.
Box A-181, Wood

MACHINERY

Econaway Abrasive Belt Splicer
Precision built. Will splice any kind of abrasive belts and sleeves straight and true in two minutes.
Also Steam Humidifiers.
Write for particulars.
Dealers Wanted.
Econaway Manufacturing Co.
Bellevue, Michigan

FOR SALE
Coe Backroll Lathe, Style DD, 48" x 66", motorized with one backroll, decimal gear box, patented knife holder, complete with 5 extra knives. Purchased new November 1947. Perfect condition. Available immediately.
CORNELIA VENEER COMPANY
Edmund St. & Bleigh Ave.
Philadelphia 36, Penna.

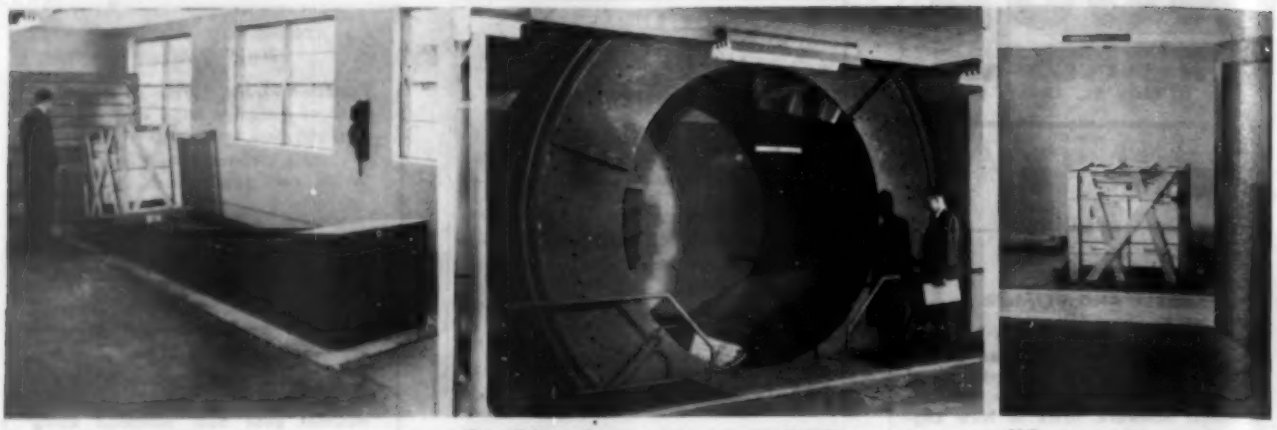
Stk. No.	
204	18 HT Ross Fork Lift Truck, 10,000 lb. capacity, cab, 17'6" lift, 48" forks, 52"-80" carriage, 7:50 x 15 tires, Serial 5795. Reconditioned in our own shop.
212	15 HT Ross Fork Truck, 15,000 lb. cap., 17'6" lift, 72" forks, 52"-80" carriage, 9:00 x 15 tires, Serial 5229. Excellent mechanical condition.
213	Series 70-6057 Ross Straddle Carrier, 10,000 lb. capacity, package size 48" x 52" Serial No. 73567. Very clean appearance and mechanically sound.
210	Buda FB20-24, 108" lift, 30" forks—rated 2000 lb. @ 24", Cushion Tires, Serial No. 0151106. This truck just like new. Was used only two weeks. Priced at $400.00 under original sale price.
205	Buda FB40-24, 108" lift, 30" Forks—rnted 4000 lb. @ 24", cushion tires, Serial No. 40516. Like new—used less than 30 days. Price is $600.00 less than new sale price.

All prices F.O.B. Our Yard
Terms 50% with order; balance Sight-Draft, Bill-of-Lading.
Subject to prior Sale.
Milwaukee Power Equipment Company
1111 W. Bruce Street
Phone: Orchard 2-1342
Milwaukee 4, Wis.

Increase your Man Hour Production through the services of
The Forest Products Engineering Co.
431 South Dearborn Street
Chicago 5, Illinois
Devoted to Woodworking exclusively for over thirty years

PLYWOOD WANTED
Perhaps you are a toy manufacturer or a user of small pieces of plywood. Someone has exactly what you need. A WOOD Trading Post ad may help you to reduce your manufacturing costs.

Designing Boxes— *(Continued from page 25)*



Impact tests ..... Revolving drum tests ..... Vibrator tests .....

LABORATORY WORKSHOP where new box designs are built.

how completely they protect their contents.

A room, devoted exclusively to the testing of corrugated and solid fibre board boxes, makes sure that tests are absolutely uniform by careful control of both temperature and humidity. This room also contains a battery of testing devices to determine the performance characteristics of the fibre board and to assure uniformly high quality of all containers produced.

Although the testing equipment is new, the personnel staff is thoroughly seasoned by long years of experience in laboratory operation for General Box. Mr. N. A. Fowler, General Box Vice President and Director of Sales and Research, directs the laboratory activities and has had thirty-one years of experience in the box building industry. John Ladd, Manager of the Designing and Testing Section and J. Don Elston, Manager of the Research Division are also very well known in the testing and design circles.

Hardwood Exhibit— *(Continued from page 28)*

saw as it cuts down a tree, another saw lopping off limbs, and still another power tool "bucking" a log. A movie of logging by means of these modern tools and methods is also shown in this display.

A point the Museum stresses in most of its exhibits is, "learning can be fun." The Paul Bunyan cabin, next in line, apparently is "just for fun" but actually teaches some of America's finest authentic native folklore.

The northwoods cabin is tilted at a tipsy angle not noticeable to the visitor until he finds it hard to keep his balance. Then he is startled by the giant model face of Paul Bunyan as he peers in the window and booms a greeting through moving lips. While the visitor studies Paul's pocket watch (big as a wagonwheel) and other out-size knick-knacks lying around the cabin, Bunyan recites some of the folk tales that have grown up about the lumber industry of America. Peepholes convenient for assorted sized visitors are spotted on one wall of the room. These reveal some of the wierd animals Paul Bunyan met in his wanderings through America's vast timberlands.

In a relaxed and receptive mood, the visitor walks to the last part of the exhibit, the "Hall of Hardwoods." Here are the model offices of tomorrow, the kitchen, living and bedrooms of a home of tomorrow (which can be visualized and planned today), and some of today's fine furniture that already has its toe in tomorrow's door.

Theme of this last exhibit is "You Live Your Life With Hardwoods," and it will show some of the hundreds of handsome and useful hardwood products which enrich today's living.

This is the end of the exhibit, except for one pleasant after-thought.

Anyone who has walked through the vast Museum of Science and Industry knows the toll taken of his energy. The Hardwoods Exhibit, even if it were not so outstanding from an educational and entertaining point, probably would attract its fair share of visitors because of one feature—the spacious lounge. One of the largest and most comfortable in the Museum, this lounge rounds out the job of selling hardwoods.

Appalachian hardwood News

BEMIS HARDWOOD LUMBER CO.

HEMLOCK-HARDWOODS-

FLOORING-DIMENSION

ROBBINSVILLE, N. C.

Code: 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 25, 26, 27, 31, 35, 38, 40

Biltmore Appalachian Hardwoods, Inc

MANUFACTURERS & WHOLESALERS
APPALACHIAN HARDWOOD LUMBER
Dry Kilns and Planing Mill

Biltmore Station, Asheville, N. C., Tel: 2-0151

Code: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 25, 26, 27, 31, 35

Ely-Thomas Lumber Company

Quality Hardwoods

General Office
CAMDEN-ON-GAULEY, W. VA.

Kiln Drying Facilities — Planing Mill

J. P. HAMER LUMBER COMPANY

Manufacturers
Appalachian Hardwoods

Kenova, West Virginia

Code: 3, 6, 7, 8, 10, 11, 13, 17, 19, 20, 21, 29, 30, 31, 32, 33, 40

W. C. HENNESSEE LUMBER CO. Inc.

Manufacturers
Appalachian Hardwood Lumber
Sylva N. C.

Code: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 18, 19, 20, 21, 23, 25, 26, 27, 30, 31, 32, 33, 39, 40

Marshall Lumber Company

APPALACHIAN HARDWOODS AND WHITE PINE
WHOLESALERS OF SOUTHERN HARDWOODS
P.O. Box 559 — Marion, N. C.
Telephone 196

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MILLETT HARDWOOD LUMBER Co.

Appalachian North & South Central Hardwoods

313 Columbia Bldg
Louisville 2, Ky.
Telephone Clay 2500

Attendance Records Broken at Annual Meeting

A registration of 189, which included hardwood lumbermen from 18 states, chalked up an all-time record attendance at the recent annual meeting of the Appalachian Hardwood Manufacturers, Inc., in Cincinnati, Ohio.

The election of officers for 1952 resulted in extension for another year of the terms of those chosen in 1951. They are:

OFFICERS—President: T. M. Millett, Millett Hardwood Lumber Co., Louisville, Ky.; Vice-President: J. P. Hamer, J. P. Hamer Lumber Co., Kenova, West Va.; Secretary-Treasurer: C. H. Clendening, Appalachian Hardwood Mfrs., Inc., Cincinnati.

DIRECTORS—Southern West Virginia: F. Edwin Mower, Mower Lumber Co., Charleston, W. Va.; Northern West Virginia: F. L. Dakin, Cherry River Boom & Lumber Co., Scranton, Pa.; Kentucky: R. W. Henderson, Stearns Coal & Lumber Co., Stearns, Ky.; Tennessee: D. Morton Rose, D. M. Rose & Co., Knoxville, Tenn.; North Carolina: C. W. Gordon, Gordon Lumber Co., Asheville, N. C.; Virginia: John C. Turner, W. M. Ritter Lbr. Co., Columbus, Ohio. AT LARGE: Ralph H. Ely, Ely-Thomas Lbr. Co., Camden-on-Gauley, W. Va.; E. M. Bonner, Atlas Lumber Co., Cincinnati, Ohio.; C. R. Wilson, Inter-Mountain Coal & Lbr. Co., Putney, Ky.; Charles Bringardner, Martins Fork Lbr. Co., Lexington, Ky.; Jos. J. Linehan, Mowbray & Robinson Lbr. Co., Cincinnati, O.; John B. Veach, P. O. Box 1091, Asheville, N. C.; E. P. Vaughn, Vestal Lbr. & Mfg. Co., Knoxville, Tenn.

Forestry Division: T. J. Mitchell, Poinsett Lbr. & Mfg. Co., Pickens, S. C.; F. H. Halstead, The New River Co., Mt. Hope, West Va.; T. D. Poore, American Association Inc., Middlesboro, Ky.; C. G. Queen, Ford Motor Co., Peabody, Kentucky.

THE MOWER LUMBER COMPANY

MANUFACTURERS
WEST VIRGINIA HARDWOODS
MASONIC BUILDING
Charleston 28, West Virginia
Phone 37-638 — P. O. Box 2115

Code: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41

VESTAL LUMBER & MFG. CO.

MANUFACTUERS
Appalachian Hardwood Lumber
Knoxville 9, Tenn.

Code: 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 26, 27, 29, 30, 32, 33, 34, 35, 36, 37

WARNER LUMBER COMPANY

"Quality Appalachian Hardwoods, Hemlock and White Pine"
P. O. Box 545 — Ashville, N.C.
Telephone 3-2431

Code: 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 26

West Virginia Hardwoods, Inc.

Manufacturers & Wholesalers
Appalachian Hardwood Lumber
Kenova, W. Va.
Telephone 2171

Code: 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 29, 30, 31, 32, 33, 35, 36, 37, 38, 40, 41

J. WALTER WRIGHT LUMBER COMPANY

Manufacturers & Wholesalers
LUMBER
UNION TRUST BUILDING
BRISTOL, TENN.

Code: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 17, 18, 19, 20, 21, 23, 25, 26, 27, 29, 30, 31, 32, 34, 38, 39

CODE . . .	
1 Bandmill	22 Sycamore
2 Resaw	23 Walnut
3 Circular Mill	24 Others
4 Planing Mill	25 Hemlock
5 Dry Kilns	26 Pine-White
6 Ash	27 Pine-Yellow
7 Basswood	28 Spruce
8 Beech	29 Oak Planking
9 Birch	30 Oak-Car Stock
10 Buckeye	31 Oak-S.S.E.
11 Butternut	32 Oak-Truck Body
12 Chestnut	33 Oak-Timbers
13 Cherry	34 Cross Ties
14 Gum-Black	35 Oak Flooring
15 Hickory	36 Maple Flooring
16 Locust	37 Beech Flooring
17 Maple-Hard	38 Dimension Semi Fin. & Fin.
18 Maple-Soft	39 Dimension Rough
19 Oak-Red	40 Stepping Pl.
20 Oak-White	41 Mouldings
21 Poplar	42 Others

Importers of
GENUINE MAHOGANY

Wholesalers of

BAND SAWN
PONDEROSA &
SUGAR PINE
SOFT TEXTURED
BIG MILL HIGH ALTITUDE STOCK

CALIFORNIA REDWOOD
BAND SAWN HUMBOLDT BAY

We Maintain a
West Coast Buying Office

DON B. WALLACE INC.
Guardian Building
Detroit, Michigan

VIRGESON'S
ONE STOP
SERVICE

SPECIALS

Appalachian Oak Drawer Sides
Southern Oak Drawer Sides
Gum Bed Rails Edge Glued,
Moulded to Pattern

INQUIRIES WELCOME

JOE VIRGESON
LUMBER CO., INC.
COLUMBIA, SOUTH CAROLINA
P. O. Box 744, Phones 5165-5166

Pritchard

(Continued from page 23)

45. In that period they were manufacturing hydraulic steering engines of their own design, for the U. S. Maritime T2 Oil Tankers, and also built, under license agreement, the Waterbury Variable Volume Hydraulic Pumps for driving the above steering engines.

W. T. Pritchard is co-inventor of a new machine and method of more accurately planing and saving in thickness, by what is known as two-way thicknessing.

Williams

(Continued from page 23)

proper moisture content — this has greatly increased the price and demand for kiln dried stock.

Instruments for recording and controlling drying elements and for automatically controlling roof ventilators; fin-pipe heating system; large fans driven by single motor for producing large volume of uniform circulation; automatic reversal of circulation; and other patented features developed by him and his associates have contributed to the improved seasoning of forest products at lower cost.

Establishing the first Moore plant at Jacksonville, Fla., Mr. Williams was also instrumental in constructing a second plant at North Portland, Ore. in 1919, to serve the West Coast lumber industry, and later, two additional plants at Vancouver, B. C. and Brampton, Ont.

Mr. Williams was born in North Carolina and moved to Florida in 1903.

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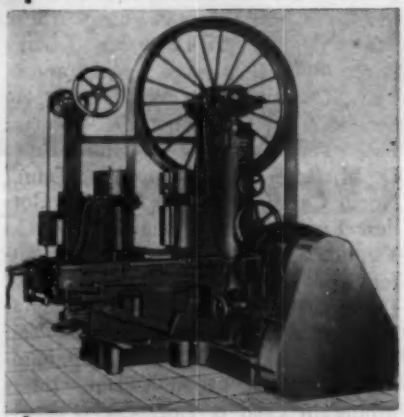

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ADVERTISERS' INDEX

Abrasive Products	58
Adhesive Products Corporation	67
Albert, Lewis	76
American Cyanamid Co.	44-45
American Saw Mill Machinery Co.	73
Appalachian Hardwoods	85
Associated Plywood Mills, Inc.	11
Auto-Nailer Co., The	79
Bahnson Co.	59
Behr-Manning Co.	18
Beverly Manufacturing Co.	64
Big Four Carbide Tool Co.	88
Bradley Lumber Co.	41
Bruce Company, E. L.	14
Buss Machine Works	9
Carboloy, Div. of G. E.	21
Carborundum Co., Coated Products Div.	4
Chevrolet Motor Div. General Motors Corp.	69
Coe Mfg. Co., The	6
Crosset Lumber Co.	43
Darlington Veneer Co., Inc.	52
Delmhorst Instrument Co.	73
Diehl Machine Works, Inc. G.M.	62
Ekstrom, Carlson & Co.	3
Fjellman & Winther Co.	83
Ford Motor Co., The	36
Foxboro Company, The	68
Frost Lumber Industries, Inc.	22
Gamble Brothers, Inc.	13
Greenlee Brothers & Co.	24
Greenlee Tool Company	12
Hedden Metal Detectors	77
Huther Bros. Saw Mfg. Co., Inc.	52
Jackson Industries, Inc.	71
Jacksonville Blow Pipe Co.	67
Jones & Orth Cutter Head Co.	49
Kimberly-Clark Corp.	15
Leitelt Iron Works	63
L. M. Equipment Co.	70
Lovsted & Co., Inc., C. M.	57
Lumber Manufacturers Inc.	68
Mansfield Hardwood Lumber Co.	77
Mattison Machine Works	37
Mauk-Seattle Lumber Co.	5
McDonough Mfg., Corp.	86
Memphis Hardwood Flooring Co.	75
Mereen-Johnson Machine Co.	55
Mid-States Steel & Wire Co.	84
Mitts & Merrill	66
Moisture Register Co.	75
Monarch Hardwood Lumber Co.	76
Monite Waterproof Glue Co.	16
Moore Dry Kiln Co.	52
National Casein Company	56
New Process Screw Corp.	51
Northern Hardwood Veneers, Inc.	76
North Pacific Lumber Co.	17
Ohio Knife Company	29
Oliver Machinery Co.	73
Pacific Mutual Door Co.	64
Penokee Veneer Company	54
Perkins Glue Company	87
Philippine Mahogany Association	7
Port Barre Lumber Industries, Inc.	65
Porter Machinery Co., C. O.	19
Quaker Oats Co., Chemical Dept.	65
Radio Receptor Co., Inc., Thermatron Div.	20
Reichhold Chemicals, Inc.	10
Rohm & Haas Company	33
Shimer & Sons, Inc., Samuel J.	54
Signode Steel Strapping Co.	66
Smith, R. L.	67
Smith Lumber Co., W. T.	54
Spliced Wood Corporation	54
Standard Dry Kiln Co.	41
Stem, Chester B. Co.	32
St. Joe Machines, Inc.	84
Synvar Corporation	74
Tannewitz Works, The	60
Timber Engineering Co.	77
Universal Door Carrier, Inc.	75
Virgeson Lumber Co., Joe	86
Wallace, Inc., Don B.	86
Whitney & Sons, Inc., Baxter D.	2
Yates-American	46